Corr-Vac© MARKIII

Manual Prepared For:

Company:

Location:

Pylon#:

Customer PO#:

Order Date: **xx - xx - xxxx**

Total Binders: **1** *of* **1**

CV·TEK

Cutting edge technology from the leader in modified atmosphere packaging

Corr-Vac© MARK III

Hot Bar & Impulse Machine Manual

CV·TEK

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MIDDLEBY FOOD PROCESSING

Table of Contents

Chapter 1: Machine Specifications

1.1. MACHINE SPECIFICATIONS

CV-TEK Model	Mark III	
Serial Number	Pylon #	Head(s) #
Year of Manufacture		
Electrical Requirements		
Minimum Compressed Air Requirements	110 psi / 7.5 bar	
Maximum Compressed Air Requirements	125 psi / 8.5 bar	
Minimum Compressed Gas Requirements	100 psi / 7 bar	
Maximum Compressed Gas Requirements	115 psi / 8 bar	

Chapter 2: Customer Service

Thank you for purchasing the CV-TEK Corr-vac® Mark III. When you need spare parts or service, please contact us at 847.741.3500.

2.1. SPARE PARTS

When ordering spare parts, please have the following information ready:

- Machine serial number
- Part numbers and exact description of the items required
- Quantity required
- Date required and any special shipment request
- Delivery address
- Purchase request/order reference

2.2. TECHNICAL ASSISTANCE

When requesting technical assistant, please have the following information ready:

- Machine serial number
- Description of the problem
- Address and telephone number
- Contact name

2.3. PREVENTATIVE MAINTENANCE

For details about the preventative maintenance service we offer, please call our technical service manager directly at 847.741.3500.

Chapter 3: General Information

The information is this manual will assist you in getting the best from your Corr-vac® Mark III. 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.

Chapter 4: Safety

Before working with any Corr-vac® machine, you should carefully read the manual. If you are not certain that you completely understand at any point which might affect the safe and/or reliable operation of this machine, do not proceed without getting competent assistance!

4.1. OPERATING THE MACHINE

The following points are strictly forbidden:

1. Do not operate this machine in an unsafe manner, for purposes other than those for which it has been designed and intended.

2. Do not connect the machine to any energy sources (electricity, compressed air and/or gas) unless the machine is fully assembled, with all protection and safety devices properly installed. This includes proper electrical grounding of the machine.

3. Do not turn on the electrical power at the machine if the rear doors are not closed and latched.

4. Do not use any gas or gas mixture containing anything but Carbon Dioxide or Nitrogen, in a standard Corr-vac® machine. Use of poisonous, flammable or explosive gases is specifically prohibited.

5. Do not use any gas or gas mixture containing more than 21% Oxygen (by volume) unless the machine is specifically built for this purpose (designated by –O at the end of the machine's serial number).

6. If the machine is used with a high-Oxygen gas mixture, ensure that your supply hoses, pressure regulators, valves, etc. are suitable for Oxygen service.

7. Do not perform any maintenance, adjustments, repairs, etc. on this machine without first cutting off all energy sources. If this is impossible because of the work requirements, take all necessary precautions to protect yourself from injury.

8. Do not operate the machine if any guards, interlocks, or other safety devices are out of adjustment, broken, or missing. Under no circumstances should any of these devices be modified in any way.

9. Do not use two operators for a machine in order to avoid any possibility that one operator might accidentally start a machine function which would endanger the other operator.

10. Disconnect the machine from all energy sources when it is not being used.

4.2. USING THIS MANUAL

Throughout this manual the reader's attention is drawn to specific safety instructions as follows:

Warning!

A warning alerts the reader to a potential hazard. Failure to read and comply with the safety instructions may result in death or injury of personnel and damage to the machine or product.

Caution!

A caution alerts the reader to recommendations or instructions. The non-observance of which could cause damage to the machine or product.

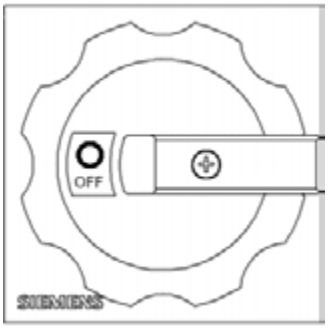
Note:

A note provides additional information which should be given special attention.

4.3. DOOR OPENING INSTRUCTIONS

Warning!

- ☑ You cannot open the door unless the rotary disconnect switch is “OFF”
- ☑ To close the door, the rotary disconnect switch must be “OFF”, and the exterior red handle must also be in the “OFF (horizontal) position



To open the upper cabinet door, follow these steps:

1. Release the black door latches, by turning them counter-clockwise, one quarter turn, to a vertical position.

2. On the red and yellow rotary electrical disconnect switch
   Ensure that the red handle is in the "OFF" (horizontal) position

4.4. DOOR CLOSING INSTRUCTIONS

To close the upper cabinet door, follow these steps:

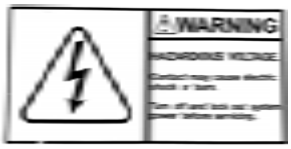
1. On the red and yellow rotary electrical disconnect switch:

   - Ensure that the red handle is in the "OFF" (horizontal) position
   - Hold the release lever down, as you close the door (or the disconnect switch shaft will not enter the back of the door assembly)

2. Close the black door latches, by turning them clockwise, one quarter turn, to a horizontal position.

Warning!

- ☑ You cannot open the door unless the rotary disconnect switch is “OFF” and the release lever is held down
- ☑ To close the door, the rotary disconnect switch must be “OFF”, and the exterior red handle must also be in the “OFF (horizontal) position and the release lever must be held down

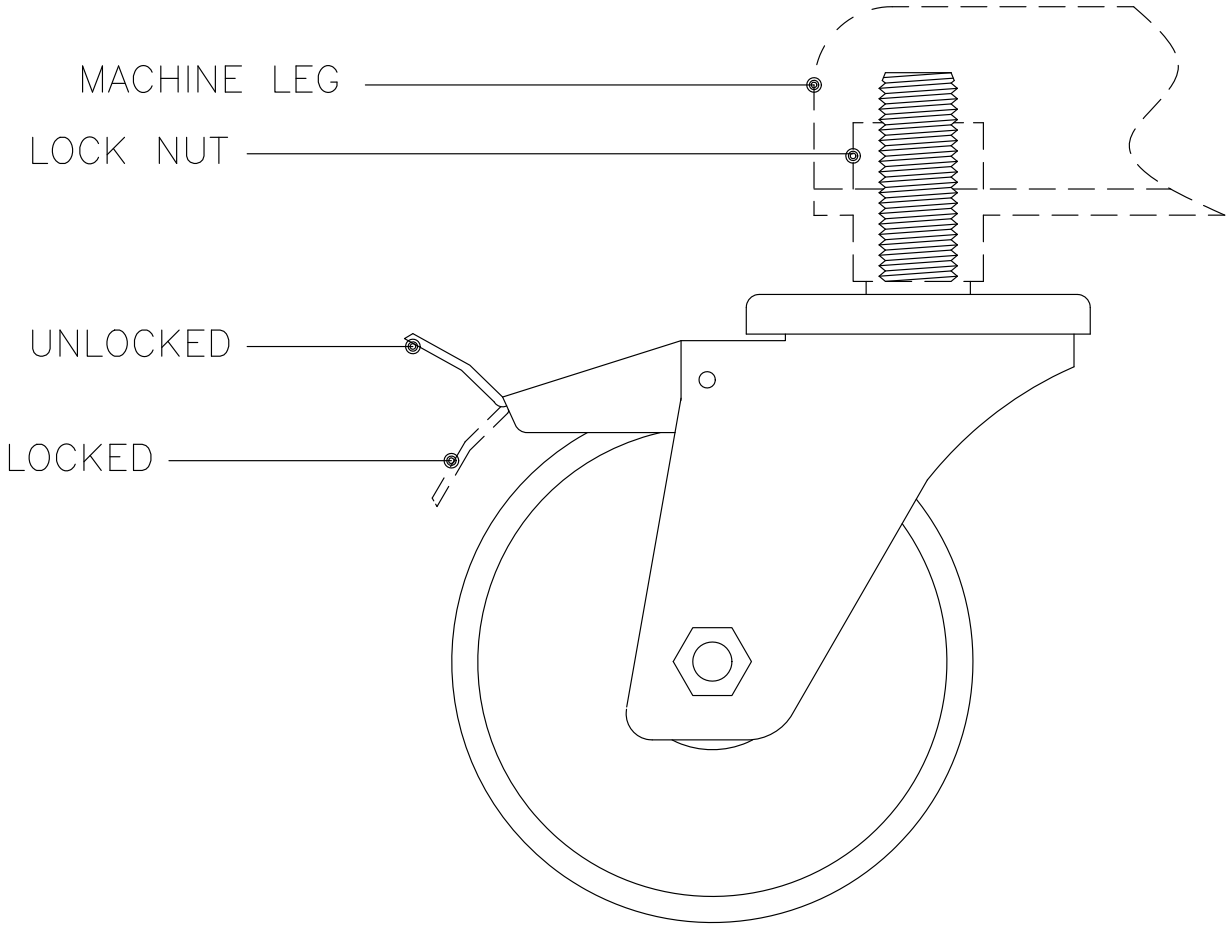


4.5. LOCKING CASTORS – INSTALLATION

Screw the castor's threaded stud up through the machine leg until the top of the castor is tight against the underside of the leg, then turn the lock nut tight against the top of the leg.

Warning!

Never install the lock nut under the leg, as this will put more stress on the castor stud. Failure of this stud could cause the machine to tip over.



Chapter 5: Installation

5.1. 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.

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.

5.2. UNLOADING AND POSITIONING THE MACHINE

If this is your first Corr-vac® Mark III, we strongly advise you to let a CV-TEK representative (or authorized agent) remove the crate, assemble the machine, attach a power supply and check the machine prior to putting it into service. Our representative will then train your personnel in safe operating procedures, troubleshooting and maintenance.

Warning!

Great care must be taken to assure safe handling. Always:

- ☑ Comply with the handling instructions
- ☑ Move the machine slowly
- ☑ Guarantee safety around the machine during these operations
- ☑ The machine should not be lifted without adequate equipment and the presence of skilled personnel

The machine should be moved to the desired position by using the wooden crate to which it is secured, so as to ensure better balancing and avoid damage during transportation.

Extreme care should be taken when using fork trucks. Check that the lifting capacity is sufficient before moving the machine. Make sure the forks are correctly positioned within the spaces provide in the wooden crate. Always make sure that the machine weight is correctly balanced with respect to the lifting point.

Removing the Crate

Crating will vary somewhat, depending upon the machine model and the options included. However, certain similarities will be found with all crating.

1. Remove the crate-top by first unsnapping the metal clips around the edges of the top face. Then carefully lift off the crate-top.

2. Remove the front and rear faces of the crate by unsnapping the metal clips around each face and then removing each face.

3. Before removing the end-faces, first remove the bolts which connect both faces to the wooden cross-bar in the crate. Then unsnap the remaining metal clips and remove both end-faces.

4. Remove the plastic film from around the machine.

5. Remove the wooden cross-bar from the machine.

6. Remove any parts or accessories which may have been taped to the exterior of the machine.

7. Open the doors at the back of the machine and remove all parts which are packed inside. Close and securely latch the doors.

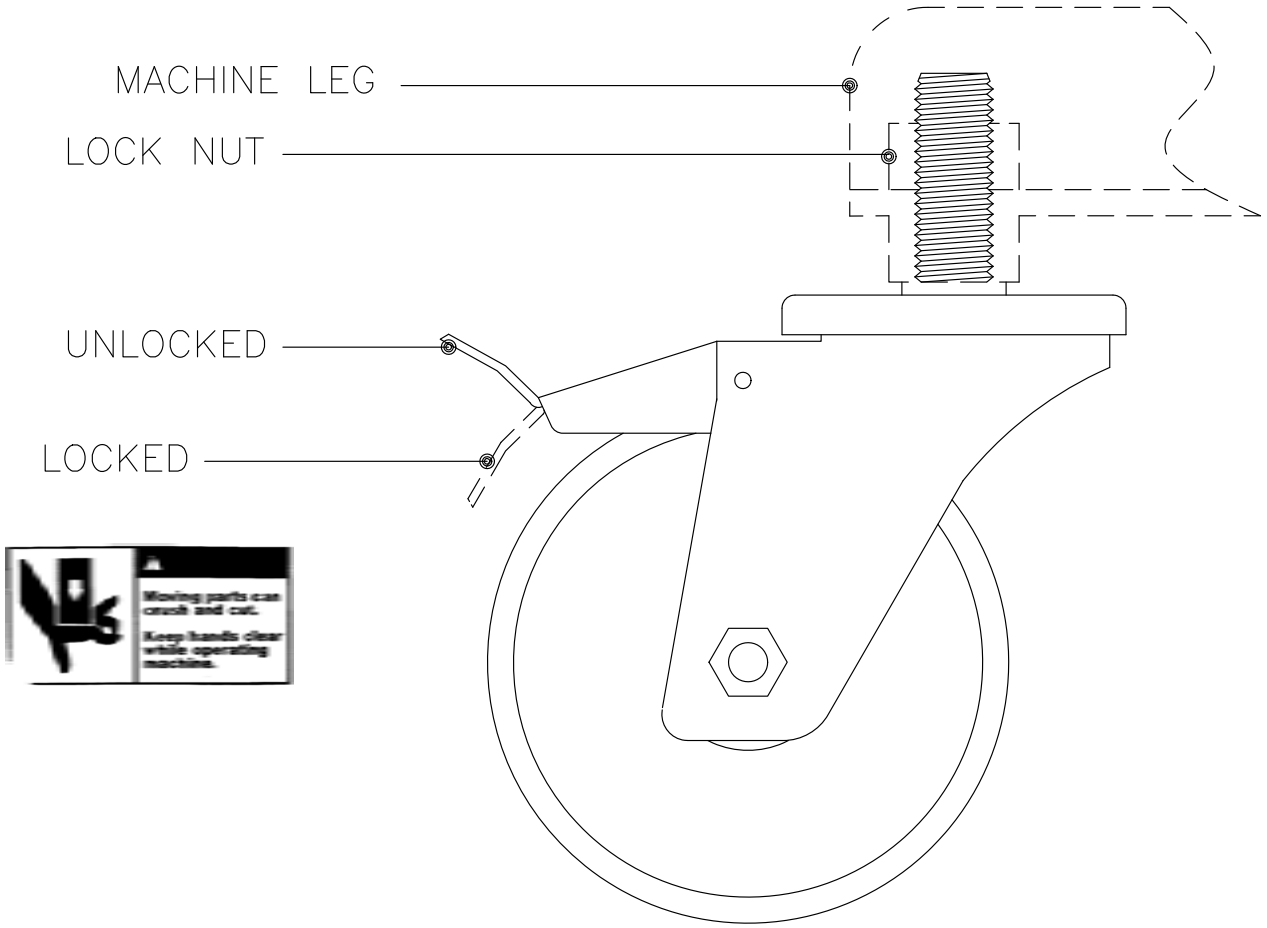
8. Remove the bolts which fasten the machine to the base of the crate.

9. Un-wrap the machine 'feet' or optional castors packed inside the machine.

Warning!

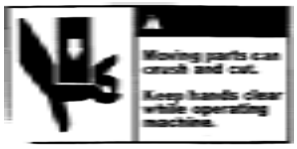
The drawing below shows how the feet or castors must be installed. Where castors are used, the threaded shaft on the castor must be turned all the way in, until the body of the castor is tight against the underside of the machine leg, as shown.

The locking nut must only be installed on top of the leg, never under the leg! Incorrect installation can cause breakage of the castor, which could permit the machine to tip over.



10. Lift the machine off the crate base and install the feet. The perimeter of the cabinet is reinforced so that lifting may be done at any point.

> **Warning!**
> The machine should not be lifted without adequate equipment, and skilled personnel.



Head Position

If you are processing top-loaded packages, it is usually best for the operator if the machine head can be mounted at the approximate height of the operator's shoulders.

For processing end-loaded bags, the most comfortable operating height is usually around 37 inches/940 mm from the bottom of the head to the floor.

The distance between the head and the packaging conveyor will be determined by the product and packaging geometry.

> **Warning!**
> If the height of the head must be changed, exercise extreme caution and carefully follow these instructions. You will be required to lift and accurately position the machine head, which can weigh as much as 220 lbs. /100 kg.
>
> Do not attempt the following steps without adequate equipment and skilled personnel.

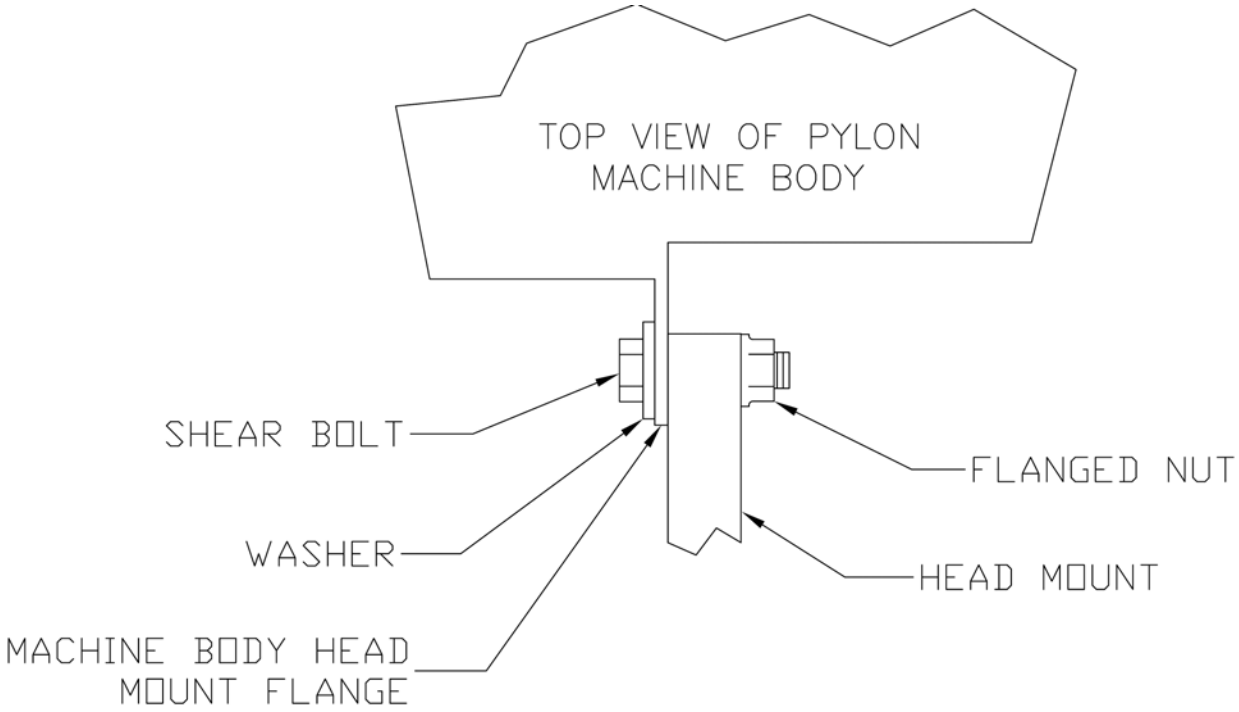
1. Ensure that the wooden lifting cradle is securely in place on the head. It will help to stabilize and protect the head while it is being moved.

   - Also ensure that the jaw is securely wedged shut with the wooden shipping wedge or fastened shut with tape, wire, etc.

2. If the head is mounted to the machine body with simple head spacers, they can remain attached to the head throughout the moving procedure.

   - If the machine is equipped with a HI-LO/joystick head mount, this head mount must be removed before the head position is changed

3. Before proceeding, study the “Head Mount” drawing below. Particularly note the position of the screws, washers, and nuts which secure the various head mounts to the machine body. It is essential that you reinstall these parts in the correct order. The shear bolts are specially made and should never be replaced with anything but a factory-supplied part.



4. If the machine is equipped with castors, securely lock all of them.

5. Slide the forks of a fork-lift all the way under the wooden lifting cradle, being careful not to strike the machine body. Gently raise the forks until they are just supporting the head.

6. If the machine has a HI-LO/joystick head mount, remove the two screws which secure the head mount to the back of the head. Then pull the head away from the machine, approximately 1 inch/25 mm. This should disengage the two mounting pins which extend rearward from the back of the head, into matching holes in the head mount.

> ⚠ **Warning!**
>
> The HI-LO/joystick head mount weighs 70 lbs. /32 kg. Do not attempt to remove it from the machine body without adequate personnel to securely hold it.

7. Remove the shear bolts which secure the head mount to the machine body. Reposition the head mount at the desired height and reattach it to the body.

8. Move the head up/down to match the new height of the head mount. Slide the head toward the head mount until the two mounting pins engage. Then secure the head to the head mount with the two screws.

9. If the machine only has head spacers, detach the head spacers from the machine body. Then pull the head just far enough forward for the spacers to be clear of the body.

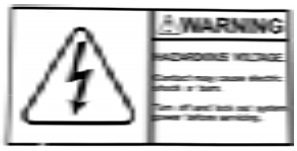
10. Move the head up/down to the desired height. Push the head back toward the machine body and properly re-secure the head spacers to the body.

Technical Assistance

For immediate technical assistance, please contact a CV-TEK machinery specialist at 847-741-3500.

5.3. SERVICE CONNECTIONS

Power Supply



> **Warning!**
> Electrical work should only be performed by trained personnel. It is your responsibility to ensure that connective wiring meets all code requirements.

1. Review the electrical drawings in this manual to determine what electrical supply will be needed. You will also find this information on a sticker inside the door of the machine's electrical enclosure.

2. There is a cord compression fitting on the left end-wall (as viewed from the machine's front) of the machine body. Bring your electrical cable through this fitting. Tighten the fitting so that it securely grips the cable, as well as creating a water-tight seal (note that there are two sizes of sealing grommets provided for different cable sizes).

3. Connect the power wiring into the terminals at the top of the main electrical disconnect switch.

> **Warning!**
> It is essential that a reliable ground (earth) wire be connected to the machine's grounding lug, located above the main disconnect.

4. Before energizing the machine's main electrical disconnect switch, take a voltmeter and carefully check the power at the terminals on top of the switch.

   - Check power between any terminal and the machine body to verify that the ground (earth) is working

   - Check power between all terminals to verify that all phases have the correct voltage

> **Note:**
> In some power systems, one phase (often called a 'wild leg') will have a higher voltage to ground. On three-phase machines, this phase should be connected at L3. On single-phase machines, it is desirable to avoid this phase if possible.

5. Before energizing the machine, first open the machine jaw. Then energize the main disconnect switch.

- Check that the EMERGENCY STOP BUTTON is illuminated (if it is not, pull it out to its normal operating position). This indicates that the machine's control system is receiving power

- If the machine contains a vacuum pump operating on three-phase power, the motor rotation must now be checked

> ⚠ **Warning!**
>
> If the pump is allowed to run backwards for more than a few seconds, it may either trip the overload protector, blow a fuse, or even damage the pump.

Pump Rotation

1. Remove one of the plastic vacuum tubes at a vacuum probe.

2. Briefly close the machine jaw to start the vacuum pump. If you feel pressure at the end of the plastic tube (instead of vacuum), immediately press the EMERGENCY STOP BUTTON to stop the pump, as it is running backwards.

   For all models, the pump motor rotation can be reversed at the motor starter/overload protector inside the machine body.

   - Turn off the power at the main electrical disconnect switch

   - Locate the three wires coming out of terminals at the bottom of the motor starter/overload protector unit. Reverse the location of any two of these wires to reverse the motor direction

   - Turn on the power to the machine and retest to verify that the pump is running correctly

Compressed Air

Warning!
Compressed air can be dangerous. Ensure that all connections are made by trained personnel using adequate parts and materials.

1. The filter/regulator/lubricator (FRL) unit is mounted on the left end-wall (as viewed from the machine's front) of the machine body. Check the MACHINE SPECIFICATIONS section of this manual for compressed air requirements.

Warning!
Under no circumstance should compressed air be supplied to the machine at pressure above 125 psi / 8.5 bar. Over-pressure may cause mechanical failure in the FRL and could be dangerous.

2. Compressed air should be supplied to the inlet port (left-hand end) in the FRL.

3. Set the FRL pressure regulator as follows:

   - All sealers except 61 ½ inch / 1560 mm: 100 psi / 6.8 bar
   - 61 ½ inch / 1560 mm sealers: 110 psi / 7.5 bar

Gas Supply

Warning!
Compressed gas can be dangerous. Ensure that all connections are made by trained personnel, using adequate parts and material. If you are using gas cylinders, be sure that they are properly secured and cannot fall over.

All gas connections are located on the right end wall (as viewed from the machine's front) of the machine body. Check the MACHINE SPECIFICATIONS section of this manual for compressed gas requirements.

Warning!
Under no circumstances should compressed gas be supplied to the machine at a pressure above 125 psi / 8.5 bar. Overpressure may cause mechanical failure in the machine and could be dangerous.

Chapter 6: Controls

6.1. CONTROL PANEL (OPERATOR INTERFACE)

This machine is controlled by an Integrated-Controller specially designed for ease of use, and with simple programming and trouble-shooting features built in. The control panel (“operator interface”) is shown on the previous page. Almost all machine functions can be operated and/or programmed from this panel.

6.2. PROGRAMMING

While you can review all the steps in all the programs without a SUPERVISOR’S KEY (see OPERATION section of this manual, Page 6-3), none of the values can be changed without inserting the KEY and rotating it clockwise to line up with the PROGRAMMING POSITION. A chart summarizing all program choices is on the previous page.

To set up or change a program, take the following steps:

1. Turn the SUPERVISOR’S KEY to the PROGRAMMING POSITION.

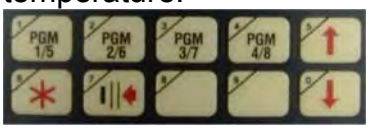
2. Select the program that you wish to work with by pressing the desired PROGRAM SELECTION BUTTON. The program number will be confirmed on the DISPLAY.

3. Move through the various DISPLAY screens by pressing the DOWN/UP BUTTONS, as explained in the OPERATION section of this manual.

4. The following section will give you complete instructions on how to program each DISPLAY screen.

CYCLES CYCLES/MIN	The top line tells you how many packaging cycles have been made with the machine since the last time this screen was reset. The bottom line tells you the average machine speed since this screen was reset (number of machine cycles divided by the number of minutes). To reset, press the ENTER BUTTON. 

MAINTENANCE SEAL BAR IN/OUT	Allows you to set the heat sealer bar either extended or retracted, for maintenance service. Each time that you press the ENTER BUTTON, the bar will reverse its position. CAUTION: IF YOU SELECT THE OUT POSITION, THE BAR WILL RAPIDLY MOVE OUTWARD, EVEN IF THE JAW IS OPEN!
HI-LO HEAD HEAD UP/DOWN	(Optional) For each program (1-4 or 1-8), allows you to set the HI-LO head mount position either UP or DOWN. Each time that you press the ENTER BUTTON, the position reverses and the DISPLAY will also show UP or DOWN.
TEMP ACT xxxºF/C TEMP SET xxxºF/C	Allows you to set the heat sealer bar temperature. This value will automatically be used for all other programs. To program the temperature SET target: 1. Press the ENTER BUTTON once.  2. Press the NUMERIC BUTTONS to change the SET temperature (shown in the upper left corner).  3. When you reach the desired set point temperature, press the ENTER BUTTON once more. This temperature value is now programmed.

	
SEAL ACT xxx.x SEC SEAL SET xxx.x SEC	This allows you to set a different heat seal dwell time for each program. To program the heat-seal SET time: 1. Press the ENTER BUTTON once.  2. Press the NUMERIC BUTTONS to change the SET temperature.  3. Press the ENTER BUTTON once more. The seal time is now programmed. 

In each program (1-4 or 1-8), you may select up to four repeats of the following cycle: vacuum/vacuum soak/gas flush/pause.

VAC

This will control how much vacuum is applied in each cycle, and is measured in inches of Mercury/millibar.

Caution!

If you set the value higher than the range of your machine's vacuum pump, the machine will be unable to complete the cycle (example: 30 Hg"/mb will not work).

SOAK

This gives you the option of extending the vacuum exposure for a period of time (seconds) after the vacuum SET point has been reached. It is typically used where there may be air pockets in a product, or for very large packages. A setting of 0 bypasses this function.

GAS

This sets the number of seconds of gas flush to be injected into the package. The volume of gas can be controlled by this gas time, and/or by the gas regulator pressure. A setting of 0 bypasses this function.

PAUSE

In larger packages, it may be necessary to give the gas flush time to circulate within the bag, before evacuating it with an additional vacuum cycle. This function is set in seconds. A setting of 0 bypasses this function.

The start of each repeat will be indicated by VAC 1, VAC 2, VAC 3 or VAC 4. Steps within each repeat (SOAK 1, GAS 3, etc.) will also be indicated by number. To end the machine cycle, set a value of 0 for all remaining functions in the program. To change any VAC/SOAK/GAS/PAUSE values in any program:

1. Press the PROGRAM SELECTION BUTTON to select the desired program number.


2. Press the DOWN BUTTON until you find the screen that you wish to program.


3. Press the ENTER BUTTON once.


4. Press the NUMERIC BUTTON to change the SET value on the DISPLAY.


5. When you reach the desired value, press the ENTER BUTTON once more, to program it.

Examples

1. Basic vacuum (only) program:

    - VAC 1 SET: 015.0 (Hg”/mb)
    - SOAK 1 SET: 00.0 (seconds)
    - GAS 1 SET: 00.0 (seconds)
    - PAUSE 1 SET: 00.0 (seconds)
    - ALL REMAINING FUNCTIONS – SET: 00.0 (seconds)

2. Basic vacuum/gas flush program:

    - VAC 1 SET: 015.0 (Hg”/mb)
    - SOAK 1 SET: 00.0 (seconds)
    - GAS 1 SET: 01.2 (seconds)
    - PAUSE 1 SET: 00.0 (seconds)
    - ALL REMAINING FUNCTIONS – SET: 00.0 (seconds)

3. Vacuum/vacuum soak/gas flush/pause/vacuum/vacuum soak/program:

    - VAC 1 SET: 016.0 (Hg”/mb)
    - SOAK 1 SET: 01.0 (seconds)
    - GAS 1 SET: 01.4 (seconds)
    - PAUSE 1 SET: 01.0 (seconds)
    - VAC 2 SET: 014.0 (Hg”/mb)
    - SOAK 2 SET: 0.7 (seconds)
    - GAS 2 SET: 00.0 (seconds)
    - PAUSE 2 SET: 00.0 (seconds)
    - ALL REMAINING FUNCTIONS SET: 00.0 (seconds)

4. Double-flush program:

   - VAC 1 SET: 015.0 (Hg"/mb)
   - SOAK 1 SET: 00.0 (seconds)
   - GAS 1 SET: 01.5 (seconds)
   - PAUSE 1 SET: 00.0 (seconds)
   - VAC 2 SET: 012.0 (Hg"/mb)
   - SOAK 2 SET: 00.0 (seconds)
   - GAS 2 SET: 00.9 (seconds)
   - PAUSE 2 SET: 00.0 (seconds)
   - ALL REMAINING FUNCTIONS – SET: 00.0 (seconds)

When all programming is complete, return the SUPERVISOR'S KEY to the RUN POSITION, and press the program number on the PROGRAM SELECTION BUTTON. Remove the KEY. The machine is now ready to operate.

Programming Summary

1. Turn the SUPERVISOR'S KEY to the PROGRAMMING POSITION.

2. Select the program that you wish to work with by pressing the desired PROGRAM SELECTION BUTTON.

3. Move through the various DISPLAY screens with the DOWN/UP buttons until you find the screen you wish to work with.

4. Make your program changes as described in the preceding text. If you are changing a packaging cycle, remember to end the program by setting a value of 0 for all remaining functions.

5. Turn the SUPERVISOR'S KEY back to the RUN POSITION.

6. Press the correct PROGRAM SELECTION BUTTON again.

6.3. OPERATION

When electrical power is turned on (with the main rotary electrical disconnect switch at the back of the machine), the DISPLAY and the EMERGENCY STOP BUTTON will be illuminated.

Hot Bar Equipped Display

The DISPLAY will read WARM-UP, xxx°F/C BELOW TEMP while the machine warms up to operating temperature (usually requiring 20-30 minutes). The machine will not complete an operating cycle if the operator attempts to use it before the sealer bar temperature is within 25°F/14°C of the programmed SET temperature.

Impulse Equipped Display

The DISPLAY and the EMERGENCY STOP BUTTON will be illuminated. The DISPLAY will read M-TEK, CORR-VAC®.

Program Selection (All Versions)

On machines with 4 programs, the programs are selected by pressing once on the desired BUTTON.

On machines with 8 programs, the programs are selected by:

- Press any button once to get the lower program number – for example, PROGRAM #2

- Press any BUTTON twice, in short succession, to get the upper program number, in this case, 6

When you select a program, the DISPLAY will show the program number, the current sealer bar temperature and the current vacuum level. A listing of all active programs can be made on the orange waterproof label at the bottom of the control panel.

If a package is properly loaded in place on the machine head, an automatic packaging cycle will begin when you push the head's latching handle forward, until it locks shut.

- If your machine has an air-operated vacuum pump, it will automatically turn on when you start each vacuum cycle, and it will turn off as each vacuum cycle is completed

- On machines with electrically driven vacuum pumps, the pump will normally run continuously. However, the machine incorporates a power-saving system which

shuts down the pump if the machine has not been cycled within 30 minutes of the previous cycle. To start up the pump, simply close the jaw to start a machine cycle

As the vacuum increases to its programmed SET point, you will see the vacuum readout changing on the DISPLAY. When the cycle is completed, the machine's jaw will automatically open, for unloading/reloading packaging.

If for any reason, the vacuum in the package does not reach the programmed SET point, the machine will not complete the packaging cycle. The operator should manually open the machine jaw, and check to see if the bag was improperly loaded into the machine. If loading looks OK, then check for a hole in the bag. Once the problem has been corrected, you can load the bag into the machine and restart the packaging cycle by closing the jaw.

All programming options are shown on a chart in the PROGRAMMING section of this manual. You must use a SUPERVISOR'S KEY to look at the settings for any program in the machine, as follows:

1. Select the program number you wish to review, by pressing the PROGRAM SELECTION BUTTON.

2. Press the DOWN BUTTON to move to the next screen on the DISPLAY.

   - Continuing to press the DOWN BUTTON will move you through the full range of DISPLAY screens.

   You can reverse direction by pressing the UP BUTTON.

   If you wish to return to the first screen, simply push the desired PROGRAM SELECTION BUTTON

   - In many of the screens you will see the programmed target value (SET) and the current actual value (ACT)

3. Remember that you cannot change any values in the programs unless the SUPERVISOR'S KEY is pointing at the PROGRAMMING POSITION.

Emergency Stop Button

If you press this BUTTON it will immediately shut down the vacuum pump. If the machine is cycling, the vacuum probes and/or the heat sealer bar will return to their

retracted positions, and the packaging cycle will stop. The light in the BUTTON will also go dark.

You can reset by pulling the BUTTON out. However, you must then reselect the desired packaging program before cycling the machine.

Cycle/Heat Seal Button

If the machine is running through a packaging cycle, each time that you momentarily press this button, the machine will immediately stop the portion of the cycle that it is in, and move on to the next portion.

If you hold the BUTTON down for 2 seconds, the heat sealing system will immediately be engaged (at any time that the jaw is closed).

Clean Cycle Button

Pressing this BUTTON will prepare the machine for internal cleaning of the vacuum system. You will also see the following message on the DISPLAY: CLEAN CYCLE, ACTIVE.

1. The jaw must be open to use this program.

2. When you select this program the vacuum pump will start up.

3. The vacuum valve will open, and remain open, for the entire period.

When you wish to cancel the CLEAN CYCLE, push the BUTTON again. The DISPLAY will show M-TEK CORR-VAC®, and the vacuum pump will automatically shut down in 30 minutes, if the machine is not used again.

Supervisor's Key

This key switch must be pointing to the RUN position, with the KEY removed, for normal machine operation. See the PROGRAMMING section of this manual for additional functions.

6.4. VACUUM PROGRAMMING OPTIONS

Screen	Title	Function
1st	CYCLES CYCLES/MIN	Tells number of machine operating cycles and average cycles/minute speed
2nd	MAINTENANCE SEAL BAR IN/OUT	Positions sealer bar for maintenance
3rd	HI/LO HEAD HEAD UP/DOWN	(Optional) sets head position
4th	TEMP ACT xxxºF/C TEMP SET xxxºF/C	Displays sealer actual temperature Sets sealer target value
5th	SEAL ACT xx.xºF/C SEAL SET xx.xºF/C	Displays sealer actual seal time Sets sealer dwell time (seconds)
6th	VAC ACT 1 xxx.x VAC SET 1 xxx.x	Displays actual vacuum level (Hg"/mb) Sets target value for first vacuum cycle
7th	SOAK ACT 1 xx.x SOAK SET 1 xx.x	Displays actual soak time Sets first vacuum soak cycle time (seconds)
8th	GAS ACT 1 xx.x GAS SET 1 xx.x	Displays actual gas-flush time Sets first gas-flush cycle time (seconds)
9th	PAUSE ACT 1 xx.x PAUSE SET 1 xx.x	Displays actual pause cycle time Sets first pause cycle time (seconds)
10th	VAC ACT 2 xxx.x VAC SET 2 xxx.x	Displays actual vacuum level (Hg"/mb) Sets target value for second vacuum cycle (Hg"/mb)
11th – 21st	Remainder of operating cycles through second, third and fourth sets of VAC/SOAK/GAS/PAUSE settings	

6.5. TROUBLESHOOTING CONTROLS

The Corr-vac® control system is unique in that it functions from a menu-driven operating system, which has been specially written for the Integrated-Controller. Operating, programming, and trouble-shooting can be done from these menus.

The basic Integrated-Controller configuration contains four programs. An optional eight program configuration is also available. Four-program Integrated-Controllers can be upgraded to eight-programs in the field with a kit.

The Integrated-Controller and the heat-sealing system both require 208-240 VAC 1Ø power. 24 VAC 1Ø power is required to operate the pneumatic, vacuum and gas valves. Depending upon the available power supply, there will be various transformers built into the machine to supply these voltages. Details are shown in the electrical drawings included in this manual.

All sensors operate on 24 VDC, which is created in the Integrated-Controller.

The EMERGENCY STOP BUTTON provides double safety by acting in two parallel ways. When pushed in, its internal light goes dark, and the following events occur:

1. 24 VAC power is directly cut off to all valves. The machine is designed to retract all cylinders if power is lost.

2. The Integrated-Controller simultaneously commands each valve to retract all cylinders, for double protection.

All sensors and valves contain LED's, which illuminate when they are sending or receiving a signal. There are also LED's on the corresponding input/output terminals of the Integrated-Controller. This allows you to visually check whether signals are being transmitted and received by the various sensors and valves.

The sensor LS-1 which starts each machine cycle is located on the machine head, just below the OPERATOR INTERFACE box. It is a proximity sensor, adjusted to switch on (the LED will illuminate) when the pivot shaft arm is 1/16 inch/2 mm from the face of the sensor.

On each vacuum probe air cylinder you will find a hall-effect sensor. It is triggered by a magnet embedded in the air cylinder's piston; it should be positioned 2 inches/51 mm from the top of the plastic cylinder cap down to the top of the black plastic sensor. The sensor switches on (the LED will illuminate), and stays on, at the top of the piston's upward stroke. The sensors on all vacuum probe cylinders must be switched on before the machine will make a heat seal. This interlock feature protects both the vacuum probes and the heat-sealer bar.

Connectors for each valve inside the machine contain special electronic filters, as well as the LED which illuminates when they receive a 24 VAC signal.

Fault Messages

FAULT EMERGENCY STOP	EMERGENCY STOP button is pushed in. Pull out to clear the fault.
WARM-UP xxxºF/C BELOW TEMP	When temperature is within 25°F/14°C of SET-point, DISPLAY will change to CV-TEK CORR-VAC® Machine is then ready to operate.
FAULT TEMP OVER RANGE	Shuts down logic and heat sealer. Cannot be cleared until seal bar temperature is near (or below) the SET-point temperature. Clear by turning SUPERVISOR'S KEY to PROGRAM, then back to RUN.
FAULT T/C OPEN WIRE	Thermocouple circuit has failed. Machine logic and heat sealer will shut down until corrected.
FAULT VACUUM PUMP	Motor overload protector for electrical vacuum pumps has tripped. Manually reset the over-load protector. Water-ring pumps only: this fault message will also be displayed if the pump water supply pressure drops below 20 psi/1.5 bar at the water supply manifold.
FAULT VACUUM OPEN WIRE	Vacuum sensor, circuit has failed. Machine can be operated manually using CYCLE button.
FAULT LOW GAS	(Option) In RUN position, can only be cleared by raising gas pressure to SET pressure. You can also turn SUPERVISOR'S KEY to PROGRAMMING POSITION, and select a vacuum (only) program, not requiring gas.
FAULT PROBE ½ NOT DOWN	The Jaw opens immediately. After 5 seconds the DISPLAY shows the fault.
FAULT PROBE ½ NOT UP	The Jaw opens immediately. After 5 seconds, the DISPLAY shows the fault.
FAULT JAW NOT OPEN	Clear by manually opening jaw.

The manner in which the machine functions is described in the OPERATION and PROGRAMMING sections of this manual. There are several FAULT messages which will show on the DISPLAY, if the machine malfunctions. These are shown in the chart above.

> ⚠ Warning!
>
> Electrical work should only be performed by trained personnel. Take necessary precautions when working with live electrical circuits.

If the Integrated-Controller module fails, they can only be replaced with factory pre-programmed units.

Vacuum Control Circuit

Vacuum is measured by a piezoelectric sensor located on the main vacuum manifold just inside the top of the machine cabinet. The sensor creates an analog signal which is processed by an analog-to-digital module mounted on the machine's electrical panel (see electrical drawings included in this manual). The digital signal then goes directly to the Integrated-Controller.

If an open circuit occurs in any part of this system, a fault message will appear on the DISPLAY:

FAULT
VACUUM OPEN WIRE

If the fault is not a simple loose or broken wire, test the output signal from the vacuum sensor to the analog-to-digital module with a DC voltmeter. It should be checked between terminals 5 and 6 on the module (see electrical schematics in this manual for location). Voltage should rise from 1 up to 5 VDC, as you apply vacuum to the system. If the sensor is OK, then the analog-to-digital module has failed.

Heat-Sealer Control

The heat sealer bar is heated by a 220 VAC cartridge in the bar. Temperature of the bar is measured by a thermocouple which sends an analog signal to an analog-to-digital module mounted on the machine's electrical panel (see electrical drawings included in this manual). The digital signal then goes directly to the Integrated-Controller, which pulses a signal to the heat sealer relay when heat is required. The relay switches 220 VAC power to the cartridge.

Sealer Bar Cold

1. If the DISPLAY shows the following message, then the thermocouple, or its analog-to-digital module have failed:

   FAULT
   T/C OPEN WIRE

   Hot Bar Only

   Disconnect the two thermocouple wires from the analog-to-digital module; with an Ohm-meter, check the resistance of the thermocouple. If it shows an open wire (infinite resistance), the thermocouple has failed.

With any other resistance reading, you must substitute a new thermocouple into the machine. If this does not eliminate the problem, then the analog-to-digital module has failed.

2. If the thermocouple circuit is OK, then you will see the following DISPLAY message:

WARM-UP xxxºF/C BELOW TEMP	Hot Bar Only

If the temperature does not rise, on the DISPLAY, verify that you have full power on each power wire entering the machine.

3. Next, look for the heat sealer output light (Q1) on the Integrated-Controller. If the system is calling for heat, this light should be illuminated. If it is not illuminated, then the Integrated-Controller has failed.

4. If the heat sealer output light is illuminated, check the output of the heat sealer relay, between terminals TB1-2 and TB1-3 (upper left-hand corner of the electrical panel). You should see 220 VAC at any time that the light is illuminated. If the power is present at this point, then the heat sealer cartridge has failed.

   If the power is not OK, check to see if power is present between the inputs of fuses F1 and F2, which protect this circuit. If it is present, then replace the fuse(s). If there is no power, then the heat sealer relay has failed.

Sealer Bar Overheated

1. Check the heat sealer output light (Q1) on the Integrated-Controller. If it is continuously illuminated, then the -Controller has failed.

2. If the light is not illuminated, check the output of the heat sealer relay by measuring between terminals TB1-2 and TB1-3 (upper left-hand corner of the electrical panel). If you find 220 VAC, then the heat sealer relay has failed.

Impulse Sealer Control

Heat sealing is done by passing an electrical current through a resistive metal band for a measured period of time, ‘heat time’. At the moment the power starts through the band, the heat sealer bar pushes the band into the plastic film, which is to be sealed. When power to the band is shut off, the sealer bar remains held against the plastic film for an additional period of time, while the plastic cools and re-solidifies. This delay is referred to as ‘cool time’.

Power for the band is at 50-120 VAC. It is modulated by the impulse control system to maintain constant temperature at the band. The system automatically compensates for changes in input voltage, and also for heat sealer bar temperature rise.

Impulse Band Control

1. Verify that you have full electrical power on each supply wire entering the machine.

2. Look for the seal power output light (Q1) on the Micro-Controller. During a normal heat-seal cycle, this light should illuminate for the duration of the heat time. If it does not, refer to the section MICRO-CONTROLLER CHECKS.

3. If the Micro-Controller is ok, check the output of the sealer relay between terminals TB1-2 and TB1-3 (upper left-hand corner of the electrical panel). You should see 50-120 VAC at any time that the light (Q1) is illuminated. If the power is present at this point, then the impulse band has failed.

   If the power is not OK, check to see if power is present between the inputs of fuses F1 and F2, which protect this circuit. If it is present, then replace the fuse(s).

   If it is not present, check the phase controller:

   - The red LED should be illuminated at all times, with varying brightness. If it is not illuminated, the impulse control module must be replaced

   - If it is illuminated, check for 110-120 VAC between terminal TC-6 (on the main power transformer) and terminal 2 on the sealer relay. Power should be present when Micro-Controller light Q1 is illuminated. If there is now power, replace the sealer relay. Please note that relay damage is often caused by a short-circuit between the band and the sealer bar. Check the Kapton tape and the phenolic insulating blocks on the sealer bar (see MAINTENANCE section of this manual)

Sealer Bar Overheated

1. Check the heat sealer output light (Q1) on the Micro-Controller. If it is continuously illuminated, then the Micro-Controller has failed.

2. If the light is not illuminated, check the output of the heat sealer relay by measuring between terminals TB1-2 and TB1-3 (upper left-hand corner of the electrical panel). If you find 220 VAC, then the heat sealer relay has failed.

Impulse Band – Premature Failure

1. The majority of premature band failures comes from mechanical maintenance problems (damaged Kapton tape, improper Teflon® tape, incorrect installation, inadequate air pressure, etc.) Check the MAINTENANCE section of this manual for these items.

2. If the band overheats as soon as power to the machine is turned on, the sealer relay must be replaced. Relay damage is often caused by a short-circuit between

the band and the sealer bar. Check the Kapton tape and the phenolic insulating blocks on the sealer bar.

3. If the bands fail during normal operation:

   - Verify that you have 110-220 VAC between input power terminals P2-1 and P2-2 on the impulse control nodule. If the voltage is incorrect, verify that you have the correct voltage feed the machine at terminals L1 and L2. Note: in some power systems, one phase (often called a “wild leg”) will have higher voltage to ground. This phase must not be used for L1 or L2. If the machine supply voltage is correct, then replace the main transformer

   - If voltage between P2-1 and P2-2 is ok, check the voltage between terminals 3 and 5 on the impulse control module – it should be 5 VDC. If it is not, 5 VDC, disconnect the temperature sensor wires from the terminals 3 and 5. Recheck the voltage between terminals 3 and 5:

     - If the voltage is now 5 VDC, replace the temperature sensor
     - If the voltage is not 5 VDC, replace the impulse control module

   - When the system is operating normally, the red LED on the phase controller should be brightly illuminated at an idle (no sealing) condition. During the first half second of a normal heat seal, the LED should become partially dimmed and then for the balance of the heat time, it should become even dimmer

     - In an idle condition, verify that the LED is brightly illuminated. If it is not, either the impulse control module or the phase controller has failed. You must substitute a new part for either component to determine which part has failed

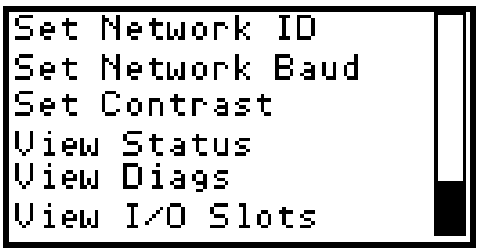
     - If the LED is brightly illuminated, at an idle condition, set the heat time for four seconds and start a heat seal cycle on the machine. If the LED does not dim as described earlier, replace the impulse control module

     - If the LED dims correctly, then place a clamp-on style AC current meter (capable of at least 30 amperes) around the wire going to the sealer bar from terminal TB1-3. In a normal sealing cycle, the current should momentarily spike up to 25-30 amperes, then stabilize around 16-20 amperes for the remainder of the heat time

     - If the meter reading does not meet specifications, replace the phase controller

     - If the meter readings are ok, the control system is functioning properly and you should recheck your mechanical maintenance points

6.6. OPERATOR INTERFACE/PLC CHECKS

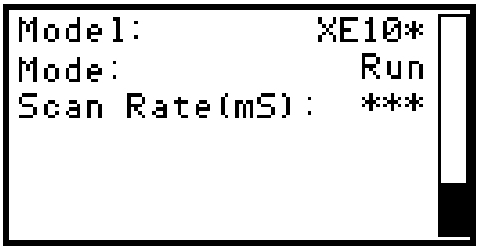


Controller Menu Screen

To check the status of the Integrated Controller series operator Interface units, press and hold the hidden scroll up and scroll down keys at the same time. The screen shown to the left will be displayed.

See page 6-25 for the location of the hidden scroll up and scroll down keys

To exit this screen and return to the normal screens, press the Back key. Press the scroll down key until View Status is highlighted. Press the Enter key. The following screen will be displayed.



Controller Status Screen

Press the Enter key to highlight what is being displayed for mode. Press the hidden Arrow down or hidden Arrow Up key until Run is displayed. Press the Enter key to store. Press the Back key to exit this screen.

Chapter 7: Preventative Maintenance

Different machine models or options, as well as various product applications, have different preventative maintenance requirements.

7.1. DAILY CHECKS

- ☐ Before operating, drain water from the air compressor tank and supply line to machine. Drain water filter on machines with manual drain. Is supply air pressure above 100 psi / 7 bar?
- ☐ Is gas supply adequate?
- ☐ Are vacuum line filters clean?
- ☐ Does cabinet cooling fan operate whenever pump is running?
- ☐ Is heat sealer bar clean?
- ☐ Is the vacuum/gas cycle and heat-seal operational?
- ☐ Is the conveyor at the correct height and parallel to the machine head?
- ☐ Are there any sharp points on the machine around the heat sealer area that could damage the vacuum bags? Is the bag forming mandrel (when used) also OK?

7.2. DAILY CLEANUP

- ☐ See CLEANING section of this manual.

- ☐ Clean the vacuum filter as necessary.

- ☐ Remove the vacuum cover plate. Clean it, and the probe carefully (a tooth brush is recommended). **Be careful not to scratch or dent the mating surfaces of the probe and cover plate, or vacuum leakage can occur.**

- ☐ Clean the heat sealer bar as needed. **Do not scrape or use abrasives, as this can damage the Teflon coating and change the bar's heat-sealing characteristics.**

- ☐ Clean the surface of the silicone rubber strips which are contacted by the heat sealer bar (on the clamping jaw) as needed. These strips should not be removed unless they are to be replaced.

- ☐ Flush the vacuum pump(s) with water as needed to avoid later problems with sticking pump vanes. With the pump running, dip the pump's vacuum inlet tube into a maximum quantity of 2-3 tablespoons of water. Do not exceed this amount or the pump may be damaged. The water will flush the pump and be expelled into the exhaust muffler bottle. This process should be repeated a few times, and then the bottle should be emptied. **Allow the pump to run for 15 minutes to dry it internally.**

- ☐ Turn off the main electrical disconnect switch on the door of the electrical cabinet.

- ☐ Shut off or disconnect the air supply to the machine.

- ☐ Shut off the gas supply valve. It may also be advisable to remove the handle on the gas supply regulator in case someone accidentally turns it to a dangerously high pressure setting.

7.3. WEEKLY CHECKS

- ☐ Clean out any material that may have accumulated in the water filter section of the air regulator assembly.

- ☐ Refill the lubricator jar in the air regulator assembly with mineral oil or “white” oil. **Do not use any other oil, or damage may occur within the machine.** Ensure that the lubricator is releasing approximately one drop for every 1-3 packages at the normal packaging line speed. If not, adjust the small needle valve screw which is located in a recessed well next to the clear plastic dome where you can observe the oil drip rate.

- ☐ Consult your vacuum pump manual for the proper maintenance as well as the recommend service schedule in the appropriate vacuum pump manual.

- ☐ For all water-ring pumps, check the in-line strainer on the water supply manifold for accumulated debris.

7.4. AS NEEDED

- ☐ All rotating and sliding surfaces on the head must be lubricated periodically as described in the MAINTENANCE section. Frequency of lubrication will be determined by operating conditions such as line speed, dusty conditions, frequent washing of the machine, etc.

Chapter 8: Cleaning

8.1. STANDARD AND AIR POWERED PUMPS

> **Warning!**
> Cleaning should only be done by trained personnel. Failure to follow these guidelines may result in damage to the machine.

The exterior of the machine can be cleaned with soap and water. We specifically recommend against pressure washing the machine, as it may drive water or debris into sensitive areas.

(Cleaning procedure applicable for machines equipped with a Hot Bar)

If plastic has accumulated on the heat sealer bar, bring the bar up to full operating temperature, then wipe the plastic off with a clean, dry rag. Be very careful not to burn yourself on the bar as you clean it.

The interior vacuum circuits of the machine can be cleaned using the CLEAN CYCLE BUTTON: 

1. Prepare a cleaning solution – never use a foaming cleaner, as this may damage the vacuum pump. Also, provide a container with a maximum capacity of approximately 2 cups/500 ml. This will ensure that the machine's external vacuum pump filter is not overfilled (which might damage the pump).

2. Press the CLEAN CYCLE BUTTON, to put the machine into a cleaning mode.

3. Hold up the container containing cleaning solution to each vacuum probe. The solution should be sucked through the vacuum tubes and into the external vacuum pump filter.

> **Warning!**
> Ensure that the solution does not rise above the red warning line found on all external vacuum pump filter bottles. Excessive liquid may get into the vacuum pump, causing mechanical damage.

4. Press the EMERGENCY STOP BUTTON to stop the vacuum pump. Then open the external filter and completely drain the cleaning solution. Reclose the filter and pull the BUTTON up, to restart the cycle.

   Repeat this cleaning cycle again, as necessary.

5. In many cases, the vacuum probes can be cleaned simply with a brush and cleaning solution. If additional cleaning is required, remove the vacuum cover plates from each vacuum probe.

- Unscrew the two knurled thumbscrews on each vacuum cover plate. The screws should be removed simultaneously, to avoid losing the clips which hold the screws and springs to the cover plate.

  As the screws are removed, be careful not to drop the cover plate.

- With the cover plate removed, it can be washed, in addition to the vacuum probes. Be careful not to scratch or dent the cover plate or vacuum probes, as this may cause a vacuum leak.

- Reinstall the vacuum cover plates – screw in the two thumbscrews simultaneously, to avoid losing the retainer clips.

6. With the machine in its cleaning mode, suck a small amount of water through the tubes and into the external filter. This will rinse the cleaning solution out of the machine. Be careful not to use too much water.

7. Press the EMERGENCY STOP BUTTON to stop the vacuum pump, then drain and reclose the external filter. Pull the BUTTON up to restart the pump.

8. For machines with electric vacuum pumps, press the CLEAN CYCLE BUTTON again to take the machine out of this operating cycle. It will be confirmed by the DISPLAY showing CV-TEK CORR-VAC®. The pump will then continue to run for 30 minutes to dry it out, and will then automatically shut down. Failure to thoroughly dry out the pump may cause mechanical damage.

9. For machines with air-powered vacuum pumps, press the CLEAN CYCLE BUTTON one last time, to take the machine out of this operating cycle. It will be confirmed by the DISPLAY showing CV-TEK CORR-VAC®. The pump will then immediately shut down.

8.2. WATER-RING PUMPS

> **Warning!**
> Cleaning should only be done by trained personnel. Failure to follow these guidelines may result in damage to the machine.

The exterior of the machine can be cleaned with soap and water. We specifically recommend against pressure washing the machine, as it may drive water or debris into sensitive areas.

If plastic has accumulated on the heat sealer bar, bring the bar up to full operating temperature, then wipe the plastic off with a clean, dry rag. Be very careful not to burn yourself on the bar as you clean it. (Applies only to machines equipped with a Hot Bar)

The interior vacuum circuits of the machine can be cleaned using the CLEAN CYCLE BUTTON:

1. Prepare a cleaning solution in a 2 cup/500 ml or less container.
2. Press the CLEAN CYCLE BUTTON, to put the machine into a cleaning mode.
3. Hold up the container containing cleaning solution to each vacuum probe. The solution should be sucked through the vacuum tubes and out through the pump exhaust.
4. In many cases, the vacuum probes can be cleaned simply with a brush and cleaning solution. If additional cleaning is required, remove the vacuum cover plates from each vacuum probe.
   - Unscrew the two knurled thumbscrews on each vacuum cover plate. The screws should be removed simultaneously, to avoid losing the clips which hold the screws and springs to the cover plate.
     As the screws are removed, be careful not to drop the cover plate.
   - With the cover plate removed, it can be washed, in addition to the vacuum probes. Be careful not to scratch or dent the cover plate or vacuum probes, as this may cause a vacuum leak.
   - Reinstall the vacuum cover plates – screw in the two thumbscrews simultaneously, to avoid losing the retainer clips.
5. With the machine in its cleaning mode, suck a small amount of water through the tubes and out of the pump. This will rinse the cleaning solution out of the machine.
6. Press the CLEAN CYCLE BUTTON again to take the machine out of this operating cycle. It will be confirmed by the DISPLAY showing CV-TEK CORR-VAC®. The pump will continue to run for 5 minutes, and will then automatically shut down. The pump's water supply valve will also shut down at this time.

Chapter 9: Maintenance and Repair

Most components of the machine are very straightforward to work on. The following sections describe only those operations where the best working method may not be as obvious.

9.1. MACHINE COMPONENTS IDENTIFICATION

10 cfm Vacuum Pump Service

Most repairs or cleanup of the pumps can be made in place, in the machine. Tear-down is done as follows:

1. Remove the exhaust muffler bottle. If the pump exhausts through the side of the pylon, remove the nylon elbow. If the controls air exhausts into the pump exhaust line, disconnect this line.

2. Disconnect the inlet tube at the fitting on the pump head.

3. Remove the six bolts around the top of the pump head.

4. Lift the pump head off the pump body, being careful not to scratch the surfaces where the pump head and body mate.

5. Examine the four carbon vanes for serious chipping. They should slide freely in their slots. They must be inserted so that the bevel on their outer edges matches with the angle of the walls of the pump ñbarrelò or ñcylinder.ò

6. Carefully replace the pump cylinder head and retighten the six bolts in an alternating pattern (1 and 4, 2 and 5, 3 and 6). Replace inlet and exhaust fittings and lines.

21 cfm Vacuum Pump Service

1. Disconnect power to the machine.

2. Remove fan by gently levering it off with a flat bladed tool.

3. Remove eight (8) hex head cap screws holding end plate on unit.

4. Remove four (4) Phillips screws that hold end cap to end plate.

5. Using a puller tool remove the end plate.

6. Remove old vanes and check for foreign particles in pump chamber. Ensure that the four vane slots in the rotor are completely clean (clean with solvent as needed).

7. Install new vanes with beveled edges to match angle of pump body wall.

8. Install end plate (use a rawhide mallet or leaded rubber mallet to tap end plate down). There are two guide pins to line up on.

9. Install the eight (8) hex head cap screws to hold the end plate in place.

10. Using a ¾" deep well socket, placed over end of shaft, drive or set bearing fully to provide clearance for rotor to turn freely.

11. Install end cap with four (4) Phillips screws (making sure to have good seal).

12. Replace fan on shaft. Make sure fan does not hit Phillips screws of end cap.

13. Install fan guard with four (4) round head screws.

28/35 cfm Vacuum Pump Service

See Vacuum Pump Manual

Water-Ring Vacuum Pump Service (All Models)

See Vacuum Pump Manual and Drawings

Electric Vacuum Pump Removal

1. Mark III pumps are removed by unbolting the pump mount screws from under the machine, with the exception of the Gast 35 cfm/50 cfh model.

2. Gast 35 cfm/50 cfh pumps have rubber mounting "feet" located at two points under the front of the pump/motor mount and at three points under the rear of the mount.

3. From above, remove the screws holding the mount down to the rubber feet at both points under the front, but only at the center point, in the back. You can then slide the pump/motor out of the cabinet.

Thermocouple Replacement (Hot-bar Sealers Only)

Thermocouples are replaced by first disconnecting the two electrical leads inside the button box compartment, releasing the compression nut on the fitting at the bottom of the button box, and pulling the lead, in their flexible sheath, out of the button box. The sheet metal pan under the heat seal bar should be removed exposing the entry of the thermocouple sensor into the back of the heat seal bar. Remove the outer compression nut, and withdraw the thermocouple sensor. When installing the replacement thermocouple, certain precautions should be observed:

1. The thermocouple leads are vulnerable to kinking, so tight bends should be avoided.

2. When installing the sensor into the back of the heat seal bar, ensure that the small ferrule on the sensor is not lost. The tip of the sensor must also be fully “bottomed out” into the full depth of the well in the bar.

3. Note that the two leads are polar (+ and -) and must be connected to the temperature controller as shown in the circuit diagram.

Head Bearings Lubrication

Head bearings should be periodically lubricated at all rotating pivot points, and sliding surfaces. A heavy, water-proof grease is recommended – comparable to the food-grade lubricants provided with later model machines.

1. Pivot points can be opened up by first removing the shaft retainer, near the right-hand end of the main pivot shaft (to which the operating handle is attached). This allows the shaft to slide sideways far enough to clean and lubricate the shaft bearings, link pivot pins and clamping bar pivot pins.

   When replacing the shaft retainer, be sure that the excess play is removed by pushing the shaft to the left before tightening the retainer.

Flow Controls (Air Cylinders)

Pneumatic flow controls are provided on most air cylinders on the machine to regulate their speed. This serves two functions:

1. Both ends of the heat seal bar should extend and retract at the same speed, to avoid misaligning the bar.

2. Extension and retraction speed for all cylinders, should be controlled to avoid hammering at the end of the stroke.

   The flow control meters the air being pushed out ahead of the moving piston in the cylinders, thereby controlling the piston's speed. The flow control mounted on the end of the cylinder toward which the piston is traveling will control the stroke in that direction only. Cylinders without flow controls have internal bumpers to cushion their stoke.

Vacuum and Air Pressure Fittings

Most plastic vacuum tubes use white nylon compression fittings. The compression nut for these fittings can be adequately tightened with finger pressure **and tools should never be used.**

Air (pneumatic) tubes use "push-lock" fittings:

1. To install a tube into a fitting, simply push the tube into the fitting until it bottoms out.

2. To remove a tube, push down on the locking ring at the top of the fitting, and pull the tube out. To release the ring it is important to push it down evenly, from all sides.

Silicone Rubber Parts Service

The silicone rubber parts are very durable, and rarely need replacement. When necessary, the following tips apply:

1. Heat Seal Back-up Strip (Hot Bar)
   This item can be removed by lifting the old strip out of the machined groove in the clamping jaw. Adhesives are not used for installation, as the rubber makes a tight fit in the groove. After installing the new rubber strip(s), adjustments may be necessary to tune for the most uniform heat seal, before the ends of the strip are trimmed flush with the clamping jaw. Make a few test seals in the Corr-vac® bags, and examine them carefully for signs of any low pressure areas in the heat seal.

   These can be remedied by slightly bunching up (or compressing) the rubber strip as it is installed in the machined metal groove, in those low pressure areas.

Alternatively, the rubber can be slightly stretched in high pressure areas. This tuning process will result in the most uniform heat seals possible.

2. Heat Seal Back-up Strip (Impulse)
   Once the ends of the strip become excessively scorched from heat, the strip can be turned over and reused for one additional operating period. Replacement is as follows:

   - The groove in the jaw must first be clean and dry.

   - Push one end of the rubber strip into the narrow portion of the groove, so that it is flush with the point where the groove widens out (near each end). Then push the remainder of the strip into the groove, working progressively across the jaw from the starting point. Avoid either stretching or compressing the rubber while you install it, or this may create an uneven thickness in the strip. Cut off the other end of the strip, so that it is flush with its end of the narrow groove.

   The Bag Clamping Strip can also be removed by pulling it out of its machined groove. The replacement should be thoroughly lubricated with soap water to ensure that it fully "bottoms out" in the groove. Start by lining up the die-cut opening in the rubber to exactly match the vacuum probe assembly. Slight stretching or bunching of the rubber may be necessary to ensure a perfect fit. Then push the rest of the strip fully into the groove.

   To replace the rear probe seal, the metal seal retainer must first be removed. When installing the new seals, adjust the two mounting screws until the seal retainer is just snug on top of the seal. Excessive tightening of the screws will cause the seal to bulge outward and interfere with the vacuum probe and clamping jaw closure.

Heat Sealer Bar Teflon® Tape Service (Hot Bar)

Depending on the type of vacuum bag being used, some machines are equipped with an adhesive-backed strip of Teflon coated glass fiber tape, over the working face of the heat sealer bar. As the tape becomes worn, it will periodically have to be replaced.

1. Turn the SUPERVISOR'S KEY to the PROGRAMMING POSITION. Select any program number, then move through the DISPLAY screens until you find:

   MAINTENANCE
   SEAL BAR IN

2. Press the EDIT BUTTON to extend the sealer bar.

3. Peel the old tape off, and clean the old adhesive off the bar with a plastic pot scrubber and solvent. Dry thoroughly before mounting the new tape.

4. Avoid getting any grease or oil from your hands on the bar.

5. The tape should be lightly tacked to the working face of the bar at one end, with a one-inch overhang. Leave 5/8” of tape projecting below the bottom edge of the seal bar (when finished, the tape will be just short of the screw heads under the bar).

6. Work across the face of the bar, lightly tacking the tape down without wrinkles. With a smooth object, firmly tack the tape to the face of the bar, taking care to push it into the recess below the raised edge on the face of the bar.

7. Trim the tape ends flush with the ends of the bar.

8. Wrap and secure the tape back over the top and bottom of the bar, without wrinkles. Firmly tack down with a smooth object.

9. Press the EDIT BUTTON to retract the heat sealer bar, and then turn the SUPERVISOR’S KEY back to the RUN POSITION.

Impulse Heat Sealer Service

The impulse sealer heats by pulsing current through a sealer band (made of a resistance heating alloy), for a controlled period of time. The heat sealer bar remains engaged for an additional controlled period of time, during which the bag seal cools to a stable condition. The sealer bar then retracts, releasing the bags.

The heat sealer bar is treated with a black anodized coating, to electrically insulate it from the current passing through the sealer band. Avoid scratching the coating surface, as electrical shorting and/or corrosion can eventually occur.

Additional insulation is provided by inserts of phenolic plastic, at each end of the sealer bar.

The surface directly behind the sealer band is also protected with a renewable layer of special Kapton® tape. It must occasionally be replaced, as needed, to avoid electrical shorting.

There are two styles of impulse sealer bands.

1. For bands with metal eyelets installed at each end, first remove the terminal screw from each end of the sealer bar. Install the new band with the colored dot facing outward (away from the sealer bar), and reinstall the two terminal screws.

2. For bands without eyelets, remove the hold-down screws, and the hold-down covers at each end of the sealer bar. Insert the short tab of the new band into the fitting at each end, with the hold-down screws finger tight. Then tighten both screws.

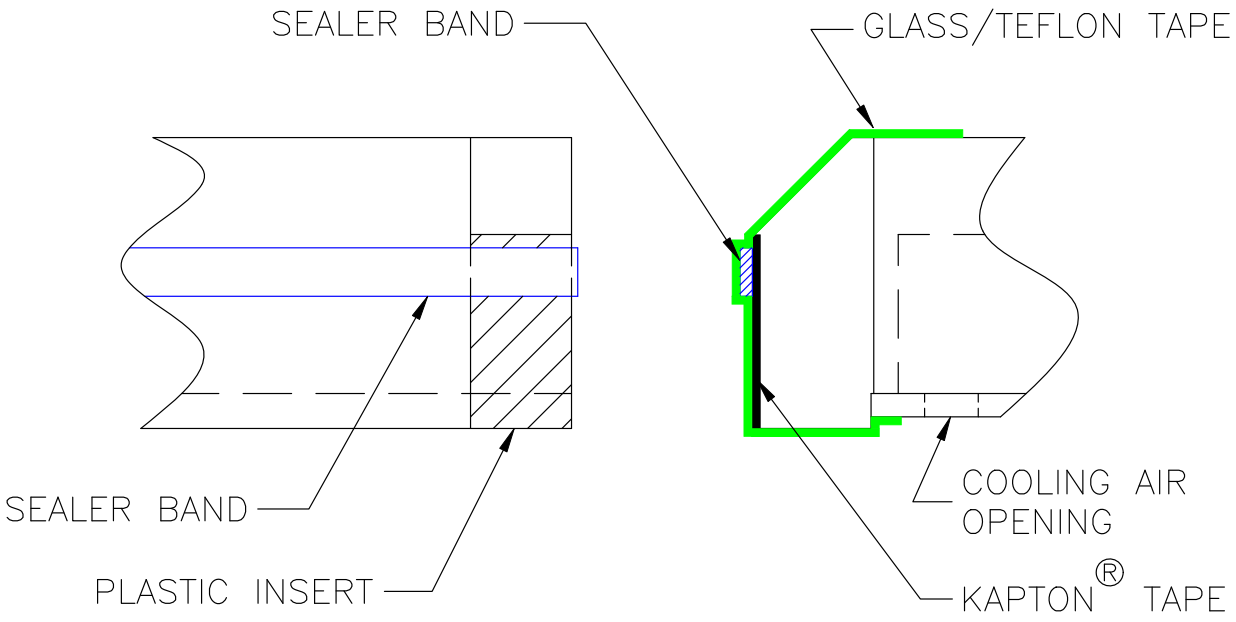
Heat sealer tape must be periodically replaced, as needed. It should be installed as shown below, making sure that it does not cover the cooling air openings on the underside of the bar. Access to the bar can be improved, as follows:

1. Turn the SUPERVISOR'S KEY to the PROGRAMMING POSITION. Select any program number, then move through the DISPLAY screens until you find:

   MAINTENANCE
   SEAL BAR IN

   Press the SET BUTTON to extend the sealer bar.

2. To retract the heat sealer bar, press the SET BUTTON, then turn the SUPERVISOR'S KEY back to the RUN POSITION.



Automatic Jaw Opener Adjustment

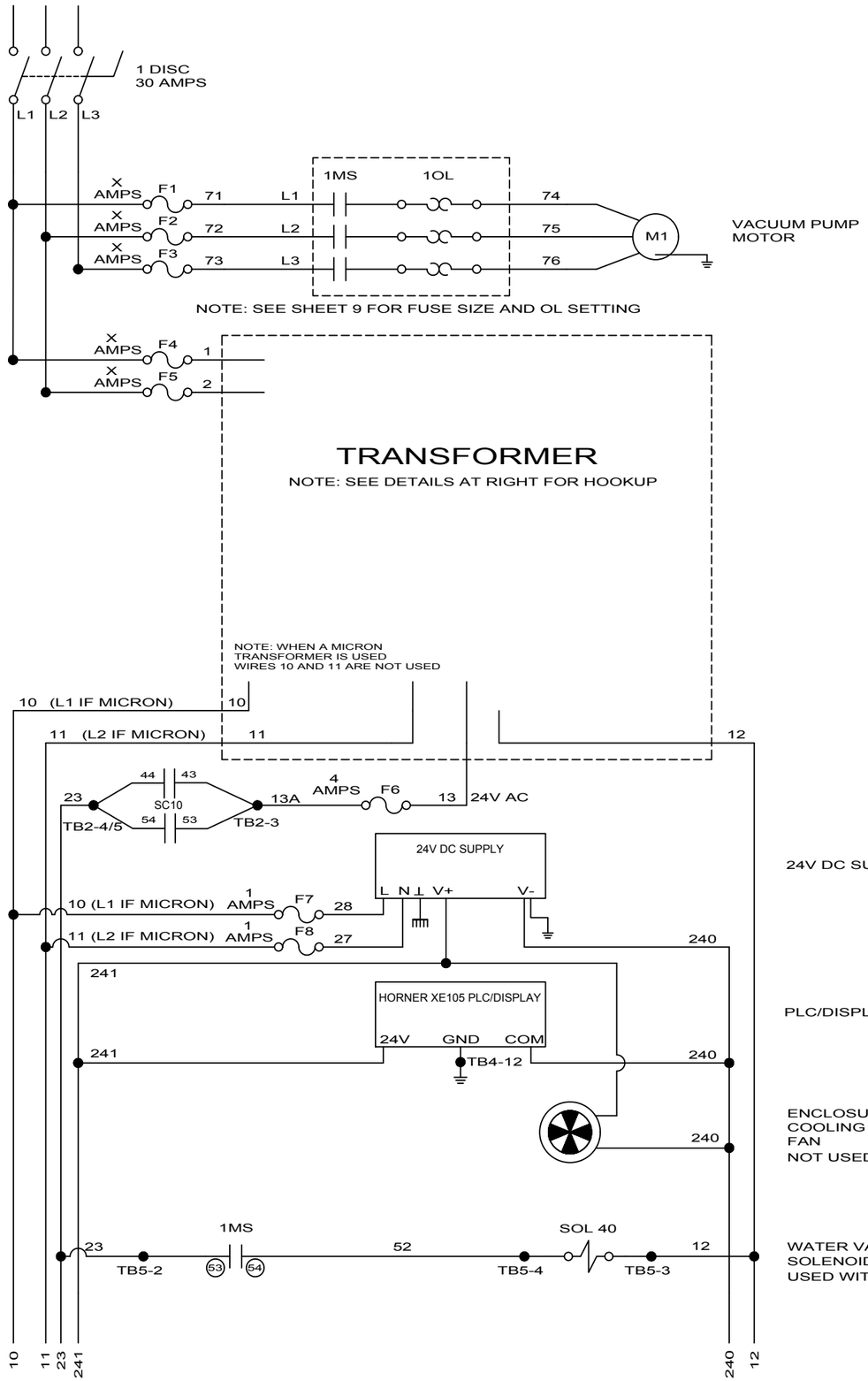
Adjustments to the jaw opening action can be made at the small air flow control, located on the auto jaw opener cylinder.

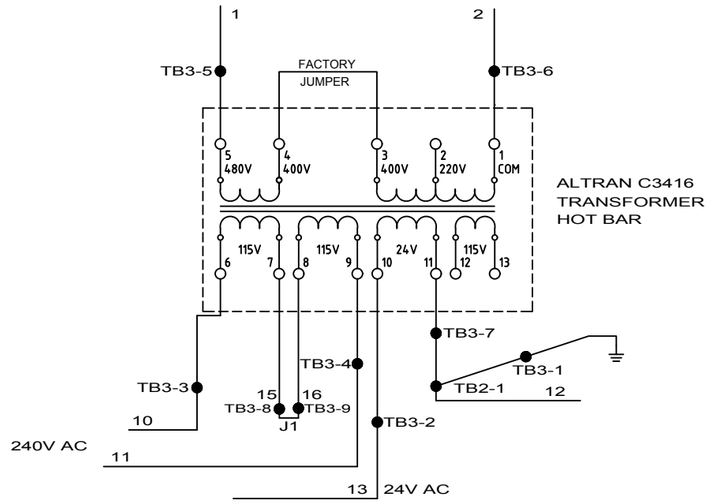
1. If the machine jaw doesn't fully open, slightly increase air flow at the flow control.

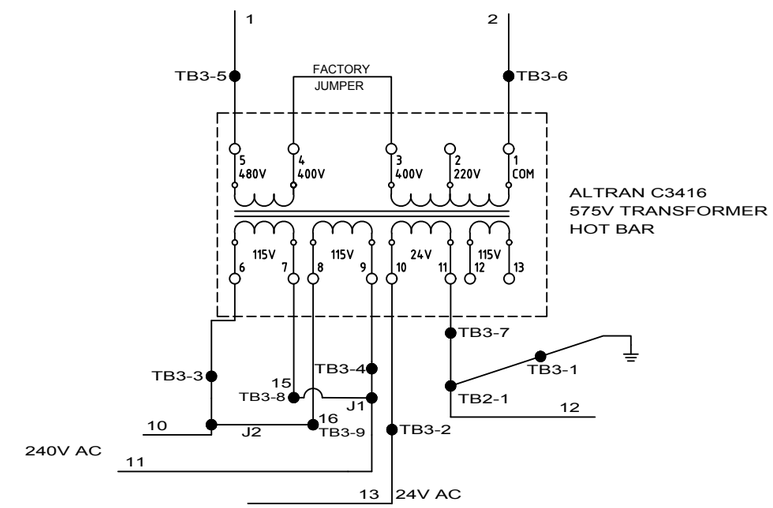
2. If the jaw opens too fast (and bounces partially shut), slightly reduce air flow at the flow control.

Chapter 10: Electrical Schematics and Bulletins

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	CHANGES PER DAVE	2/25/2020 RH	
	D	REPLACED TRANSFORMER	10/7/2020	
140	E	NEW BANNER SC10 SAFETY CONTROLLER	04/28/2021 GDS	MS
	F	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/2021 JCL	







LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

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

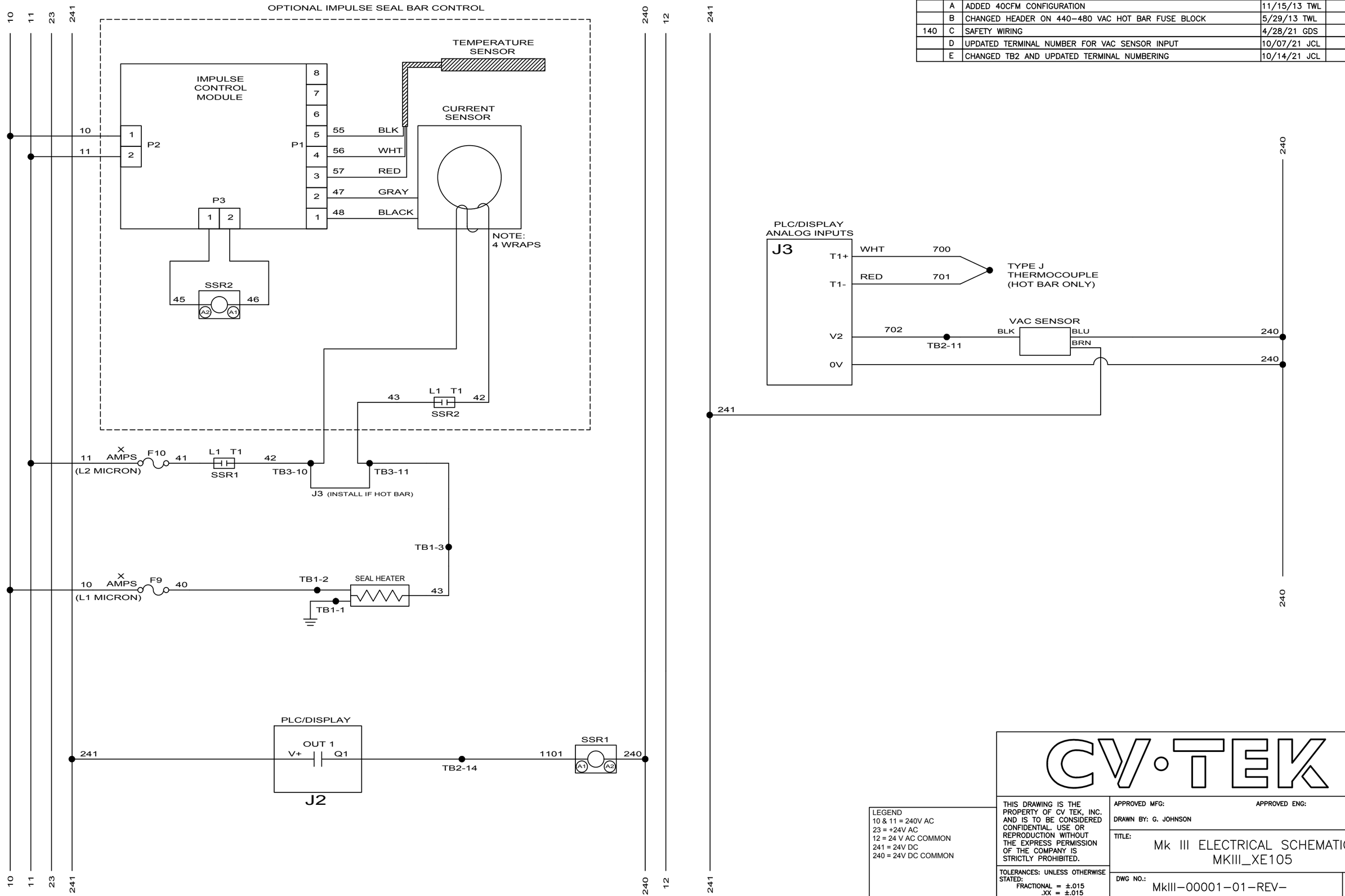
APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

DWG NO.: MkIII–00001–01–REV– REV F

SCALE: NONE | DATE: 10/14/2021 | SHEET 1 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	SAFETY WIRING	4/28/21 GDS	
	D	UPDATED TERMINAL NUMBER FOR VAC SENSOR INPUT	10/07/21 JCL	
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	



LEGEND
10 & 11 = 240V AC
23 = +24V AC
12 = 24 V AC COMMON
241 = 24V DC
240 = 24V DC COMMON

CV·TEK

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

APPROVED MFG: APPROVED ENG:

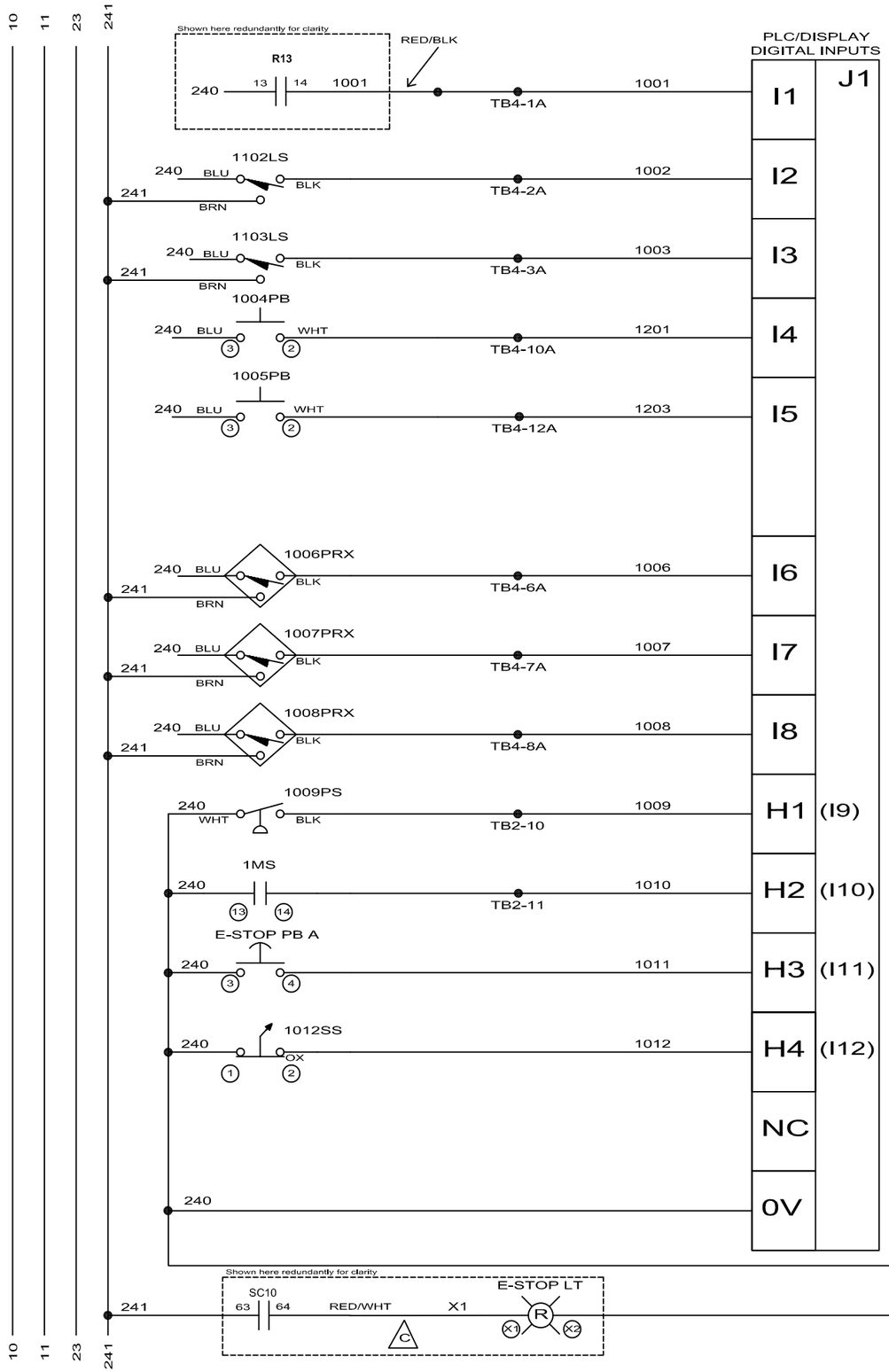
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

DWG NO.: MkIII–00001–01–REV– REV E

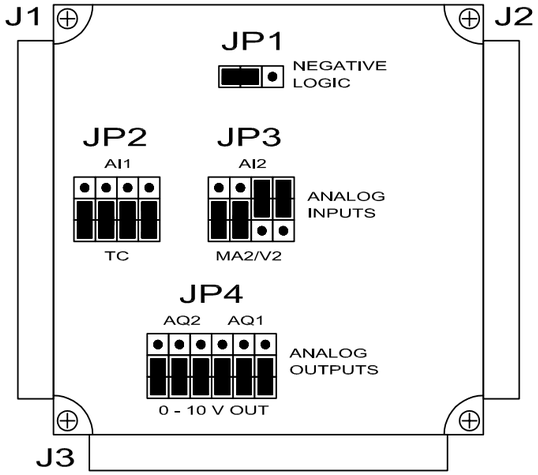
SCALE: NONE | DATE: 10/14/2021 | SHEET 2 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	NEW SAFETY, I11, I12 WIRING, ALL SENSOR SYMBOLS, JUMPERS	04/27/21 GDS	MS
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	MS
	E	CHANGED INPUT 4 AND 5 WIRING	4/20/22 JCL	MS



PLC/DISPLAY JUMPER SETTINGS

REMOVE REAR COVER TO ACCESS



LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

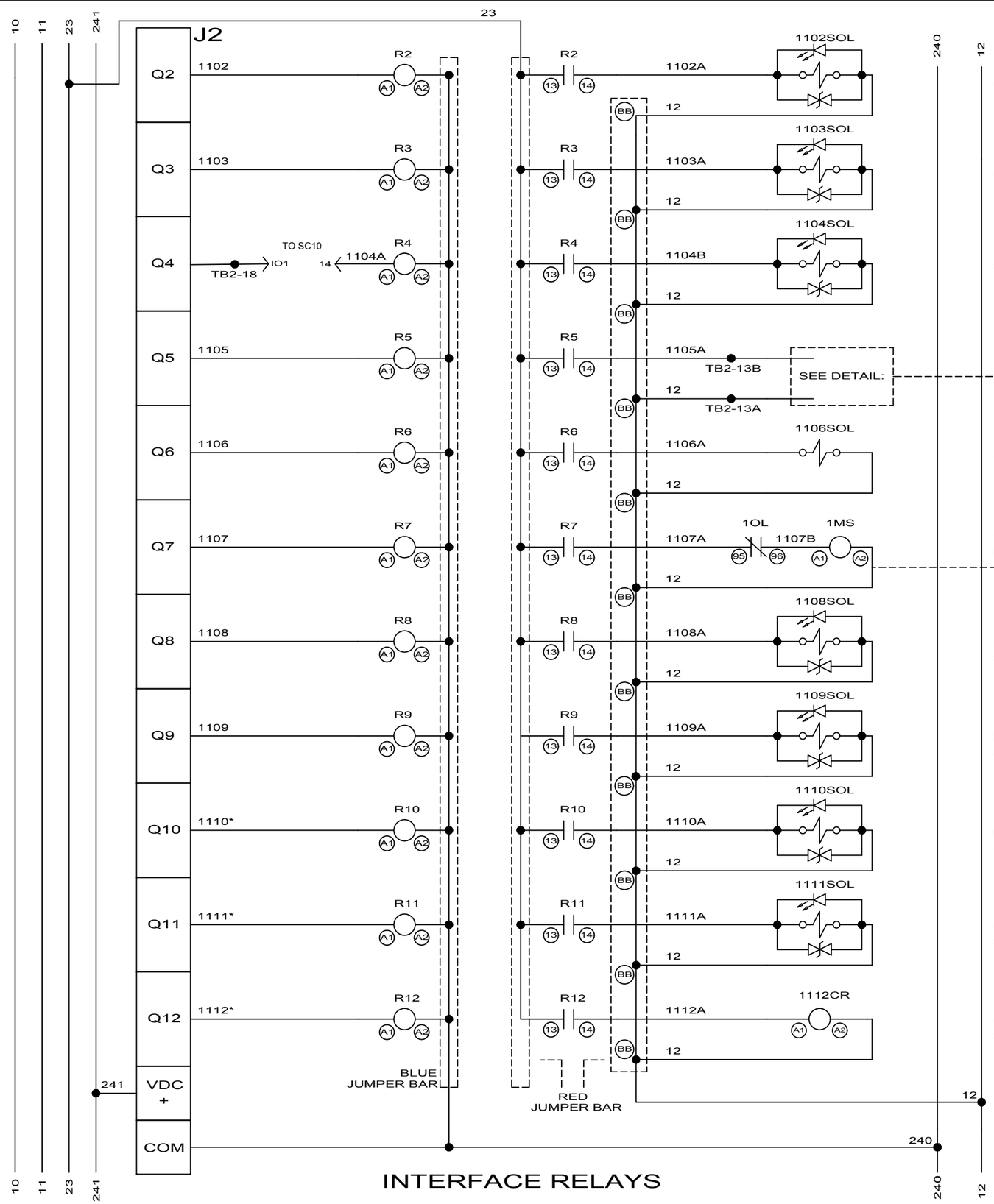
TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

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

DWG NO.: MkIII–00001–01–REV– REV E

SCALE: NONE | DATE: 4/20/2022 | SHEET 3 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	NEW BANNER SC10 SAFETY CONTROLLER	04/28/21 GDS	MS
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/10/21 JCL	MS
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	



INTERFACE RELAYS

*OPTION. ADDITIONAL CABLE REQUIRED

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

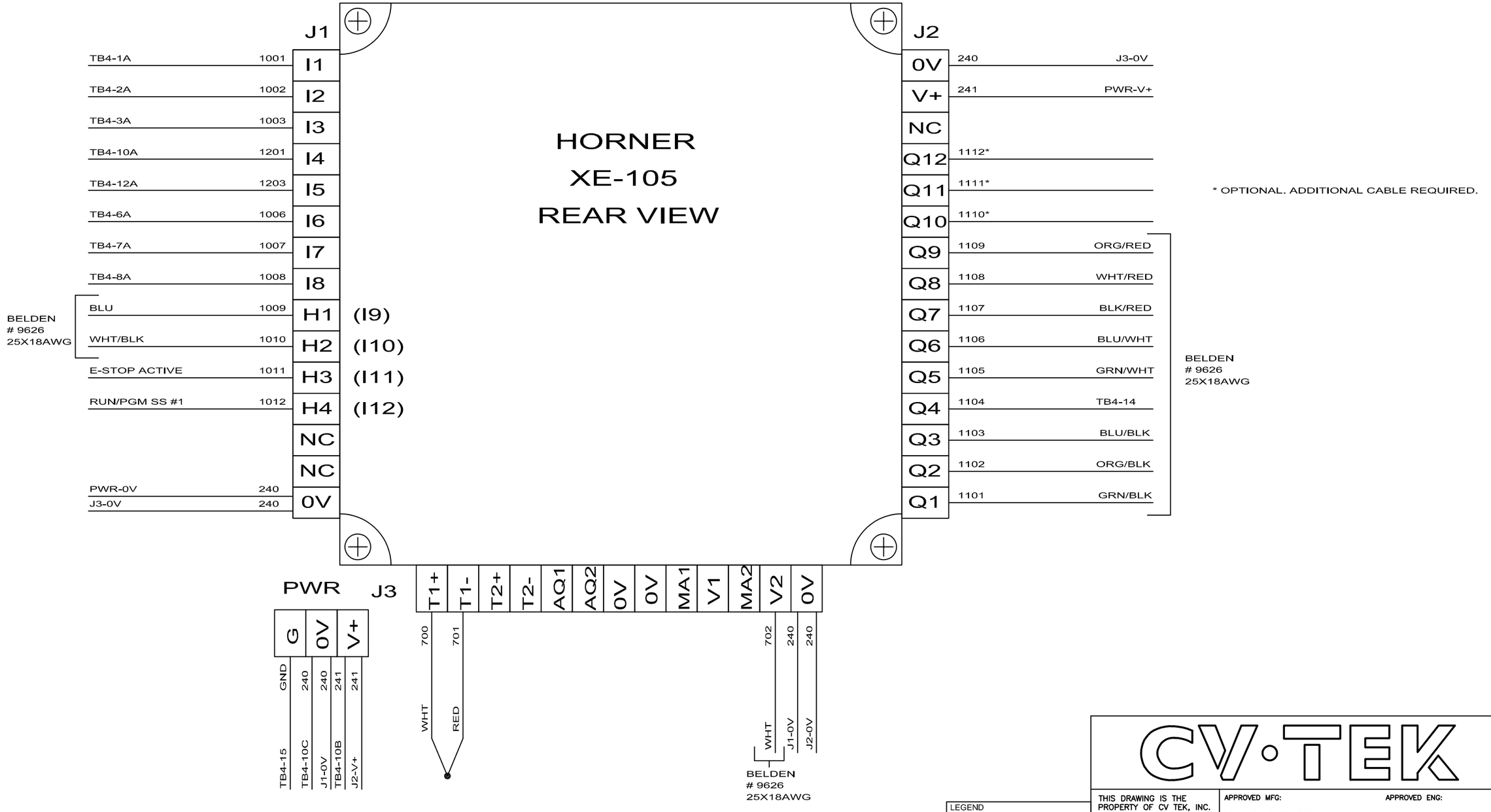
TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

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

DWG NO.: MkIII–00001–01–REV– REV E

SCALE: NONE | DATE: 10/14/2021 | SHEET 4 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
140	B	CHANGED HEADER ON 440-480 VAC HOT BAR FUSE BLOCK	05/29/13 TWL	
	C	CHANGED SAFETY WIRING	04/28/21 GDS	MS
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	09/10/21 JCL	
	E	CHANGED INPUT 4 AND 5 WIRING	03/29/22 JPS	MS



LEGEND
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241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

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

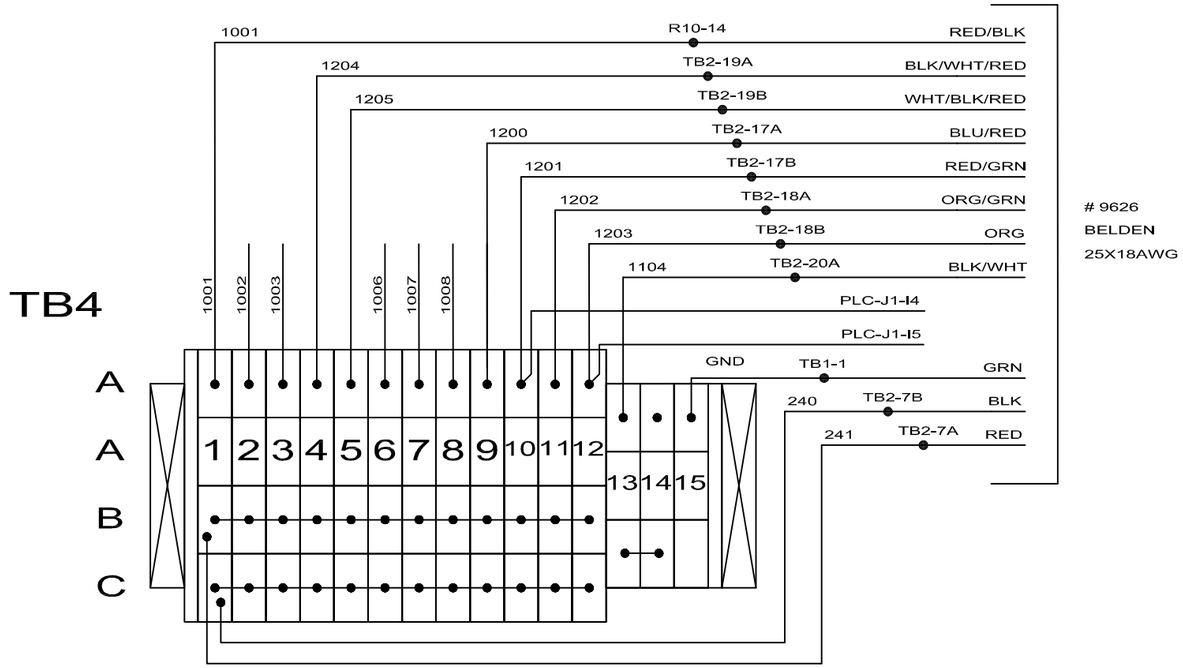
APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC
MKIII_XE105

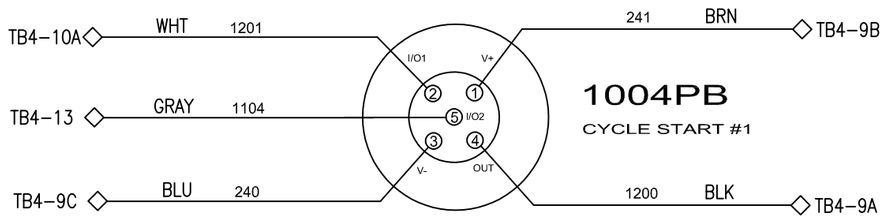
DWG NO.: MkIII-00001-01-REV- REV E

SCALE: NONE | DATE: 9/10/2021 | SHEET 5 OF 10

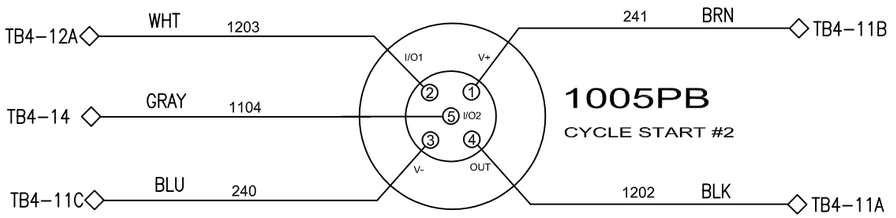
REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	CHANGED ESTOP WIRING, JAW CLOSED SENSOR AND START BUTTONS	04/28/21 GDS	MS
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	MS
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	MS
	F	ADDED WIRES FROM START PBS TO PLC INPUT	04/22/22 JCL	MS

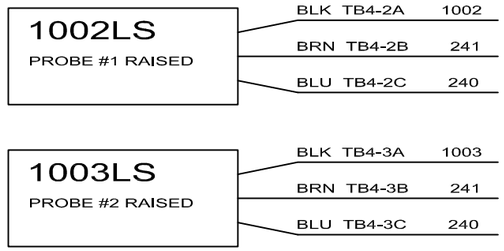


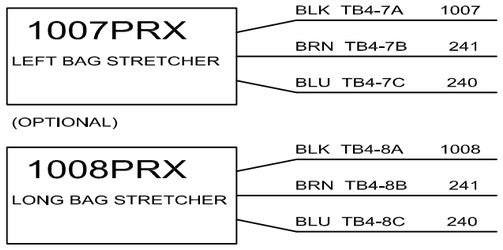
9626
BELDEN
25X18AWG



2 X BANNER K50 W/M12 5 PIN CABLE



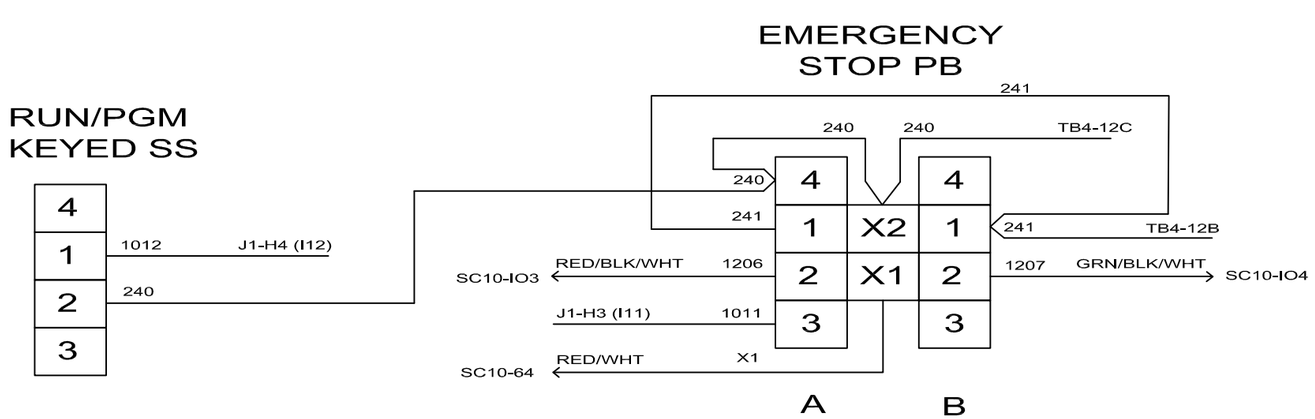




(OPTIONAL)

(OPTIONAL)

(OPTIONAL)



LEGEND
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23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

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

CV·TEK

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC
MKIII_XE105

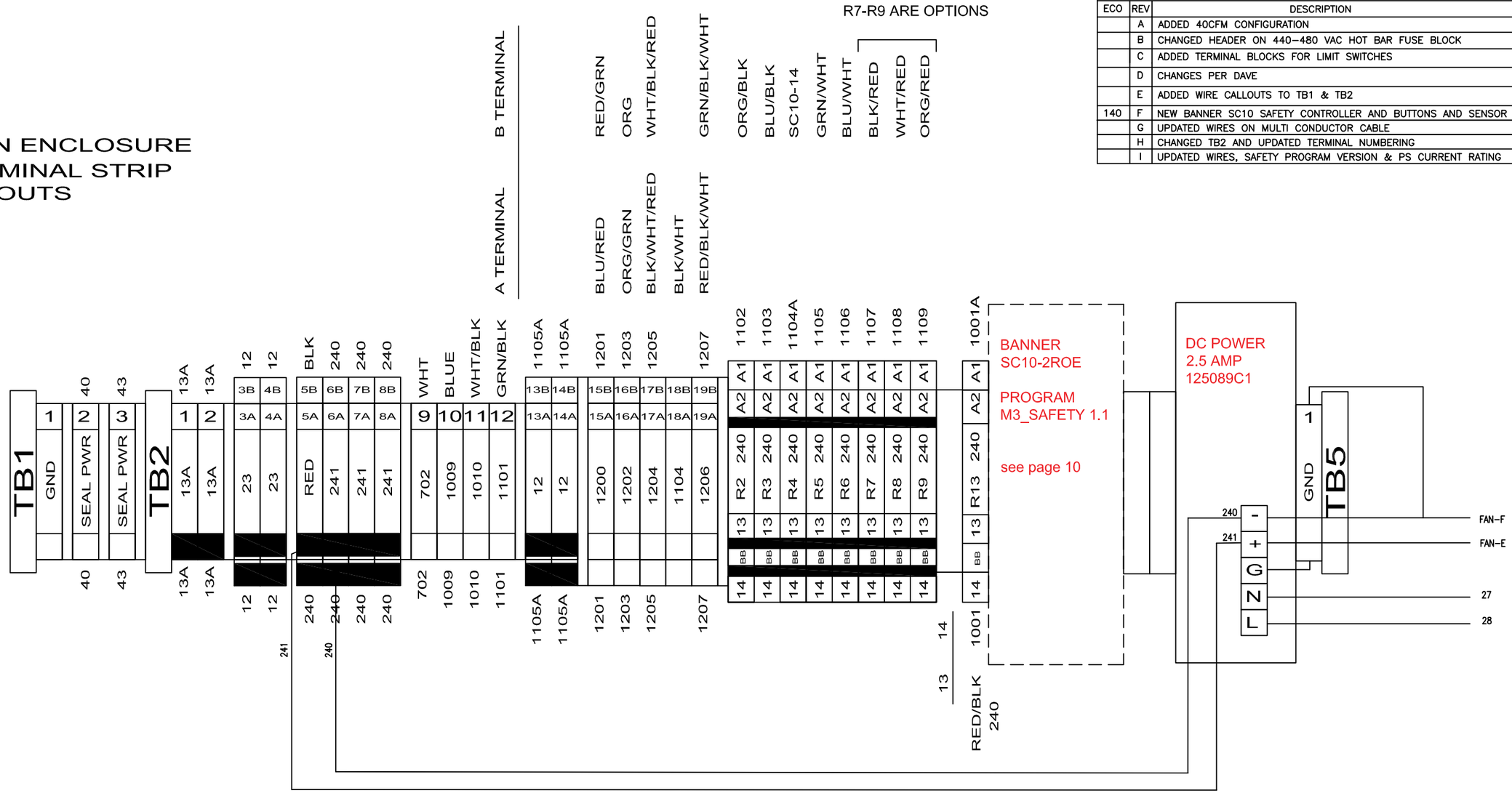
DWG NO.: MkIII–00001–01–REV– REV F

SCALE: NONE | DATE: 04/22/2022 | SHEET 6 OF 10

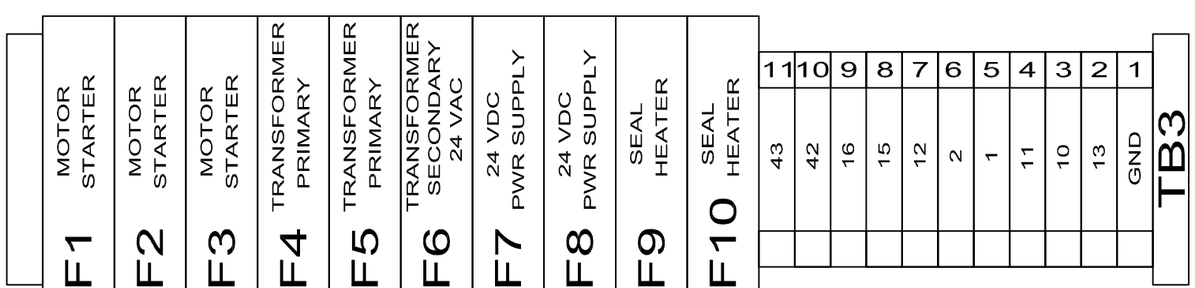
MAIN ENCLOSURE TERMINAL STRIP LAYOUTS

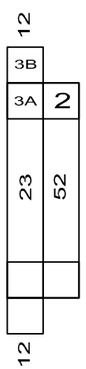
REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	ADDED TERMINAL BLOCKS FOR LIMIT SWITCHES	4/13/2016 BRB	
	D	CHANGES PER DAVE	2/25/2020 RH	
	E	ADDED WIRE CALLOUTS TO TB1 & TB2	2/11/2021 RH	
140	F	NEW BANNER SC10 SAFETY CONTROLLER AND BUTTONS AND SENSOR	4/28/2021 GDS	
	G	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/2021 JCL	
	H	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/2021 JCL	
	I	UPDATED WIRES, SAFETY PROGRAM VERSION & PS CURRENT RATING	5/02/2022 JCL	

R7-R9 ARE OPTIONS



NOTE: ADD IF WATER RING PUMP IS USED.





LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

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

DWG NO.: MkIII–00001–01–REV– REV I

SCALE: NONE | DATE: 05/02/2022 | SHEET 7 OF 10

OPERATOR PANEL TO MAIN ENCLOSURE MULTICONDUCTOR CABLE LAYOUT

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	NEW SAFETY CONTROLS	4/28/21 GDS	
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	
	F	ADDED WIRING PART NUMBER	11/23/21 AOK	
	G	UPDATED STRIP LENGTHS	12/9/21 JCL	

OPERATOR PANEL
COLOR / WIRE# / DEST. / STRIP

RED/WHT	X1	ESTOP-X1	11"
RED/BLK	1001	TB4-1A	7.5"
BLK	240	TB4-1C	6.5"
RED	241	TB4-1B	7.5"
GRN	GND	TB4-15	19"
WHT	702	PLC-J3-V2	11"
BLU	1009	PLC-J1-H1	15"
WHT/BLK	1010	PLC-J1-H2	15"
GRN/BLK	1101	PLC-J2-Q1	19"
ORG/BLK	1102	PLC-J2-Q2	19"
BLU/BLK	1103	PLC-J2-Q3	19"
BLK/WHT	1104	TB4-13	19"
GRN/WHT	1105	PLC-J2-Q5	19"
BLU/WHT	1106	PLC-J2-Q6	19"
BLK/RED	1107	PLC-J2-Q7	19"
WHT/RED	1108	PLC-J2-Q8	19"
ORG/RED	1109	PLC-J2-Q9	19"
BLU/RED	1200	TB4-9A	19"
RED/GRN	1201	TB4-10A	19"
ORG/GRN	1202	TB4-11A	19"
ORG	1203	TB4-12A	19"
BLK/WHT/RED	1204	TB4-4A	19"
WHT/BLK/RED	1205	TB4-5A	19"
RED/BLK/WHT	1206	ESTOP-A2	11"
GRN/BLK/WHT	1207	ESTOP-B2	11"

BELDEN #9626 25X18AWG
MULTI CONDUCTOR CABLE
CUT TO 8' 11"

-71612601-

MAIN ENCLOSURE
STRIP TO 30"
COLOR / WIRE# / DEST.

RED/WHT	X1	SC10-64
RED/BLK	1001	R13-14
BLK	240	TB2-5B
RED	241	TB2-5A
GRN	GND	TB1-1
WHT	702	TB2-9
BLU	1009	TB2-10
WHT/BLK	1010	TB2-11
GRN/BLK	1101	TB2-12
ORG/BLK	1102	R2-A1
BLU/BLK	1103	R3-A1
BLK/WHT	1104	TB2-18A
GRN/WHT	1105	R5-A1
BLU/WHT	1106	R6-A1
BLK/RED	1107	R7-A1
WHT/RED	1108	R8-A1
ORG/RED	1109	R9-A1
BLU/RED	1200	TB2-15A
RED/GRN	1201	TB2-15B
ORG/GRN	1202	TB2-16A
ORG	1203	TB2-16B
BLK/WHT/RED	1204	TB2-17A
WHT/BLK/RED	1205	TB2-17B
RED/BLK/WHT	1206	TB2-19A
GRN/BLK/WHT	1207	TB2-19B

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC
MKIII_XE105

DWG NO.: MkIII–00001–01–REV– REV G

SCALE: NONE | DATE: 12/9/2021 | SHEET 8 OF 10

FUSE SIZE CHARTS

HOT BAR

208-220 VAC 1 PHASE 50/60HZ			
FUSE	10CFM	PIAB	ALTRAN
F1	AM-4	NONE	
F2	AM-4	NONE	
F3	NONE	NONE	
F4	AM-2	AM-2	AM-16
F5	AM-2	AM-2	AM-16
F6	AM-4	AM-4	
F7	AM-1	AM-1	
F8	AM-1	AM-1	
F9	AM-8	AM-8	
F10	AM-8	AM-8	
MOTOR STARTER OL SETTING			
	3.8	NA	

380-415 VAC 1 PHASE 50HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-10		
F5	AM-10		
F6	AM-4		
F7	AM-1		
F8	AM1		
F9	AM-8		
F10	AM-8		
MOTOR STARTER OL SETTING			
	NA		

440-480 VAC 1 PHASE 60HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-8		
F5	AM-8		
F6	AM-4		
F7	AM-1		
F8	AM-1		
F9	AM-8		
F10	AM-8		
MOTOR STARTER OL SETTING			
	NA		

575 VAC 3 PHASE 60HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F2	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F3	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F4	AM-	AM-	AM-	AM-	AM-	AM-	AM-7
F5	AM-	AM-	AM-	AM-	AM-	AM-	AM-7
F6	AM-	AM-	AM-	AM-	AM-	AM-	AM-4
F7	AM-	AM-	AM-	AM-	AM-	AM-	AM-1
F8	AM-	AM-	AM-	AM-	AM-	AM-	AM-1
F9	AM-	AM-	AM-	AM-	AM-	AM-	AM-8
F10	AM-	AM-	AM-	AM-	AM-	AM-	AM-8
MOTOR STARTER OL SETTING							
							3.5

208-240 VAC 3 PHASE 50/60HZ								
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	ALTRAN	40CFM
F1	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F2	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F3	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F4	AM-2	AM-2	AM-2	AM-2	AM-2	AM-2	AM-16	AM-2
F5	AM-2	AM-2	AM-2	AM-2	AM-2	AM-2	AM-16	AM-2
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4		AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1		AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1		AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8		AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8		AM-8
MOTOR STARTER OL SETTING								
	2.6	4.8	6.0	6.1	4.0	8.5		9.0

380-415 VAC 3 PHASE 50HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F5	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
MOTOR STARTER OL SETTING							
	1.6	2.0	3.3	3.5	2.5	3.9	3.9

440-480 VAC 3 PHASE 60HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F5	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
MOTOR STARTER OL SETTING							
	1.3	2.4	3.0	2.8	2.5	3.9	5.0

IMPULSE

208-240 VAC 3 PHASE 50/60HZ						
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60
F1	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F2	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F3	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F4	AM-16	AM-16	AM-16	AM-16	AM-16	AM-16
F5	AM-16	AM-16	AM-16	AM-16	AM-16	AM-16
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
STANDARD F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
HIGH ENERGY F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING						
	2.6	4.8	6.0	6.1	4.0	8.5

380-415 VAC 3 PHASE 50HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	LEM60
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F5	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING							
	1.6	2.0	3.3	3.5	2.5	3.9	3.9

440-480 VAC 3 PHASE 60HZ						
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F4	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F5	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING						
	1.3	2.4	3.5	2.8	2.5	3.9

208-220 VAC 1 PHASE 50/60HZ			
FUSE	PIAB		
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-16		
F5	AM-16		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
F10	AM-20		
HIGH ENERGY F9	AM-32		
F10	AM-32		
MOTOR STARTER OL SETTING			

380-415 VAC 1 PHASE 50HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-10		
F5	AM-10		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
HIGH ENERGY F10	AM-20		
F9	AM-32		
F10	AM-32		
MOTOR STARTER OL SETTING			

440-480 VAC 1 PHASE 60HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-8		
F5	AM-8		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
HIGH ENERGY F10	AM-20		
F9	AM-32		
F10	AM-32		
MOTOR STARTER OL SETTING			

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440-480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	ADDED 40CFM PUMP FOR 380-415VAC	6/18/2014 BRB	

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

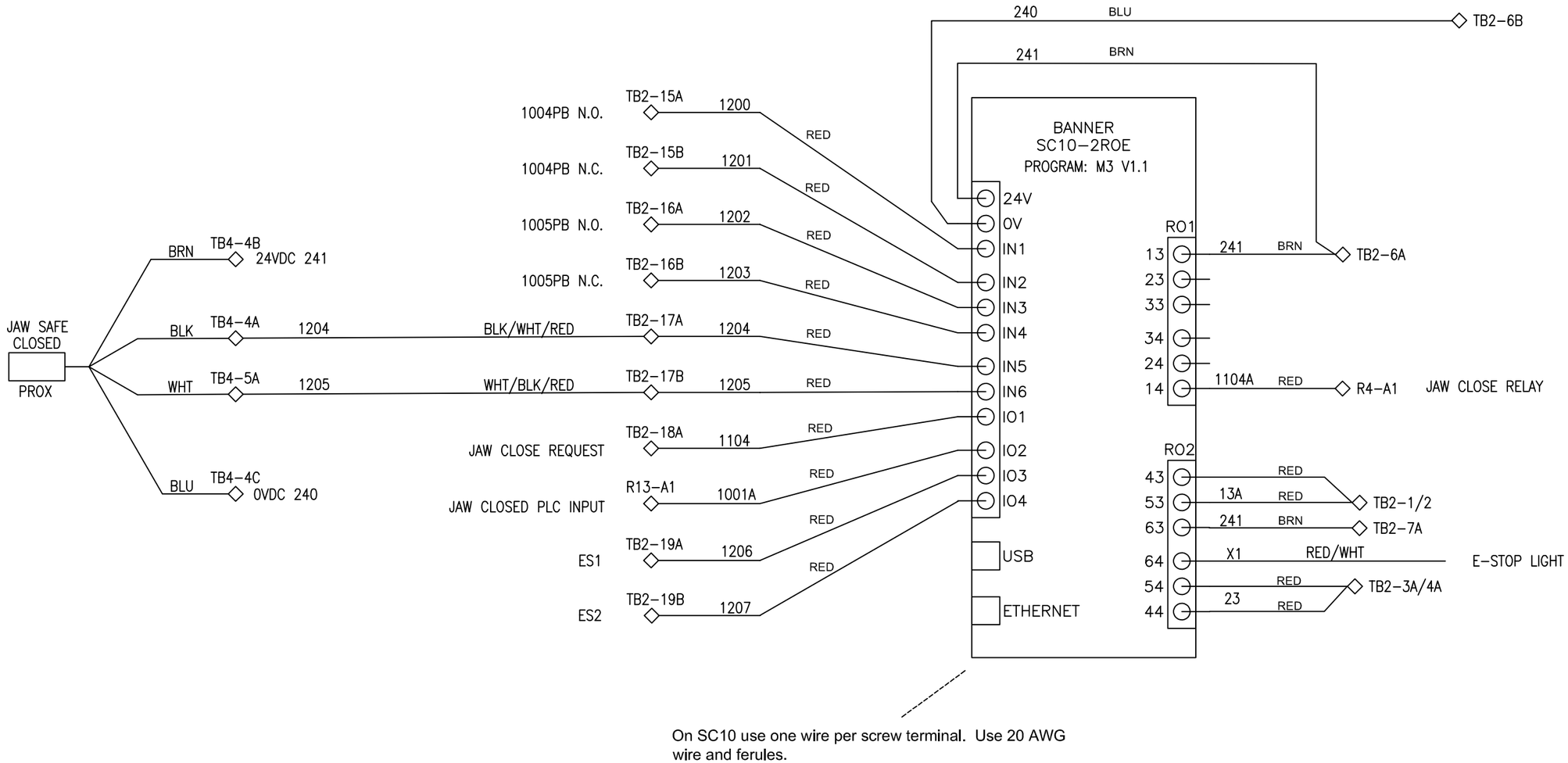
M-TEK INC.

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON
TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105
DWG NO.: MkIII-00001-01-REV-C
REV C
SCALE: NONE DATE: 12/08/2014 SHEET 9 OF 10

SAFETY CONTROLLER DETAILS

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
140	A	NEW SAFETY CONTROLS. NEW SHEET 10	04/28/21 GDS	
	B	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	
	C	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	
	D	UPDATED SAFETY MODULE PROGRAM VERSION	04/20/2022 JCL	



On SC10 use one wire per screw terminal. Use 20 AWG wire and ferules.

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

M-TEK INC.

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

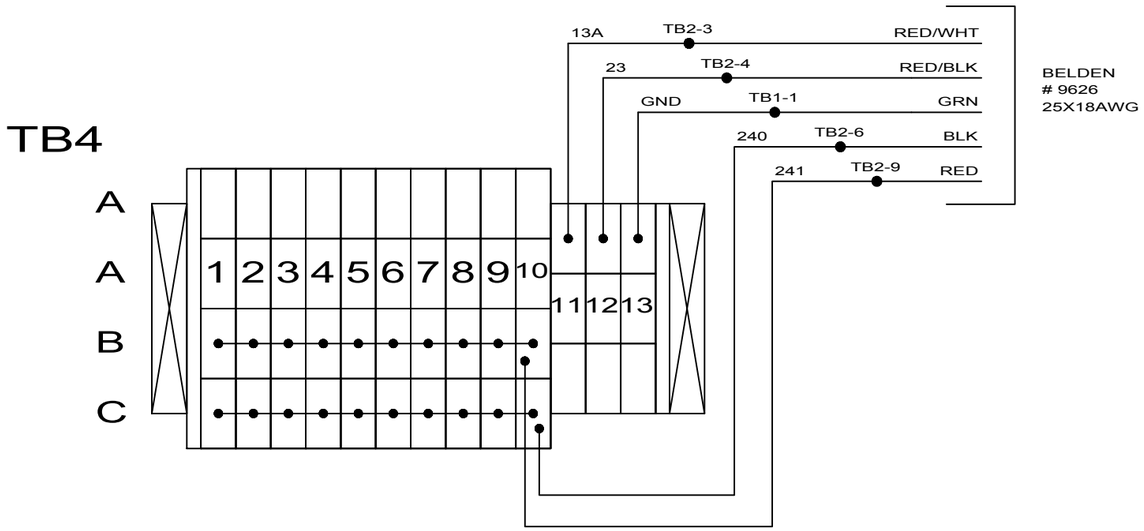
APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

DWG NO.: MkIII-00001-01-REV-C REV D

SCALE: NONE DATE: 04/20/2022 SHEET 10 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	



BLK TB4-4A 1004
CYCLE START #1

N.O. 3	N.O. 4

WHT B4-4B 241

LEFT
1005PB
PALM BUTTON

(OPTIONAL)

BLK TB4-5A 1005
CYCLE START #2

N.O. 3	N.O. 4

WHT B4-5B 241

RIGHT
1005PB
PALM BUTTON

(OPTIONAL)

PRIOR TO SN 3125

1001PRX
JAW OPEN/CLOSED
- BLK TB4-1A 1001
- BRN TB4-1B 241
- BLU TB4-1C 240

1002LS
PROBE #1 RAISED
- BLK TB4-2A 1002
- BRN TB4-2B 241
- BLU TB4-2C 240

1003LS
PROBE #2 RAISED
- BLK TB4-3A 1003
- BRN TB4-3B 241
- BLU TB4-3C 240

1006PRX
RIGHT BAG STRETCHER
- BLK TB4-6A 1006
- BRN TB4-6B 241
- BLU TB4-6C 240

(OPTIONAL)

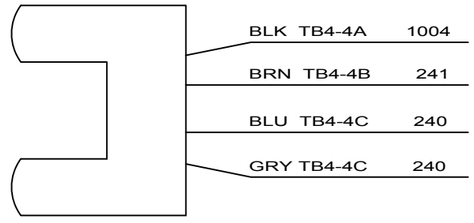
1007PRX
LEFT BAG STRETCHER
- BLK TB4-7A 1007
- BRN TB4-7B 241
- BLU TB4-7C 240

(OPTIONAL)

1008PRX
LONG BAG STRETCHER
- BLK TB4-8A 1008
- BRN TB4-8B 241
- BLU TB4-8C 240

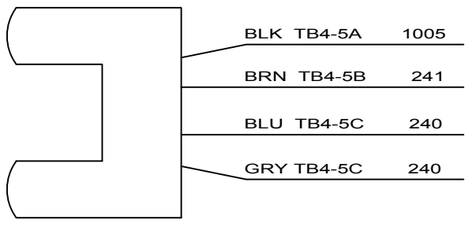
(OPTIONAL)

1004PB
CYCLE START #1



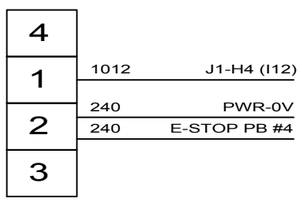
(OPTIONAL)

1005PB
CYCLE START #2

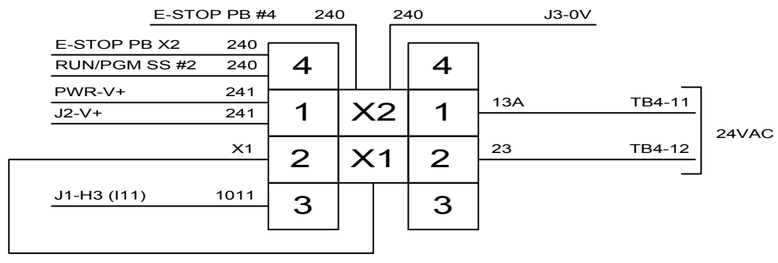


(OPTIONAL)

RUN/PGM KEYED SS



EMERGENCY STOP PB



LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

m-tek INC.

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

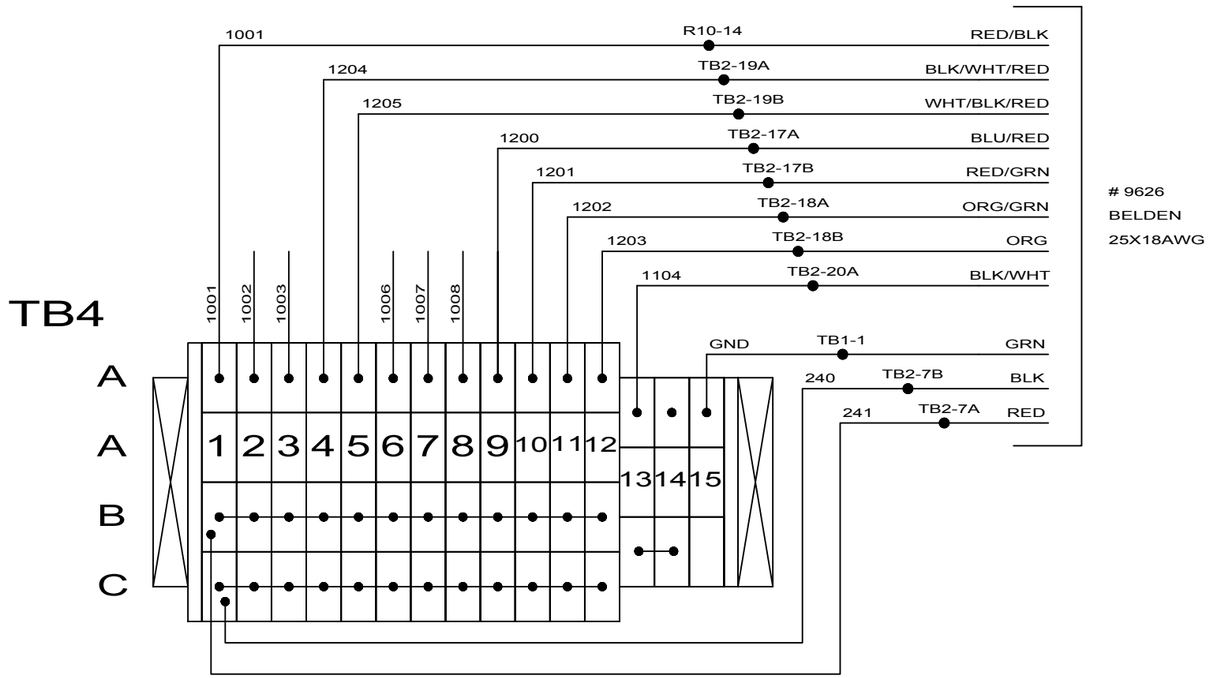
TITLE: Mk III ELECTRICAL SCHEMATIC

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

DWG NO.: MkIII–00001–01–REV– REV —

SCALE: NONE | DATE: 01/21/10 | SHEET 6 OF 9

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440-480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	CHANGED ESTOP WIRING, JAW CLOSED SENSOR AND START BUTTONS	04/28/21 GDS	MS
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	MS
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	



9626
BELDEN
25X18AWG

1001PRX — JAW CLOSED

1	BRN	TB4-4B	241
2	WHT	TB4-5A	1205
3	BLU	TB4-4C	240
4	BLK	TB4-4A	1204

1006PRX — RIGHT BAG STRETCHER (OPTIONAL)

BLK	TB4-6A	1006
BRN	TB4-6B	241
BLU	TB4-6C	240

1002LS — PROBE #1 RAISED

BLK	TB4-2A	1002
BRN	TB4-2B	241
BLU	TB4-2C	240

1007PRX — LEFT BAG STRETCHER (OPTIONAL)

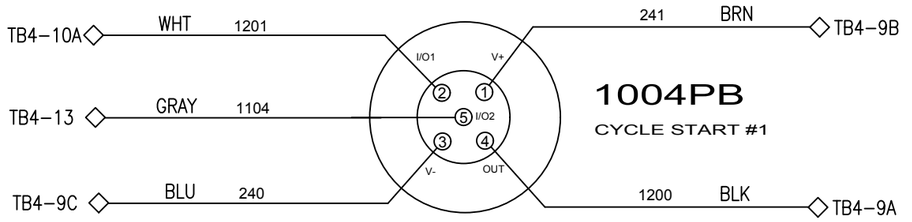
BLK	TB4-7A	1007
BRN	TB4-7B	241
BLU	TB4-7C	240

1003LS — PROBE #2 RAISED

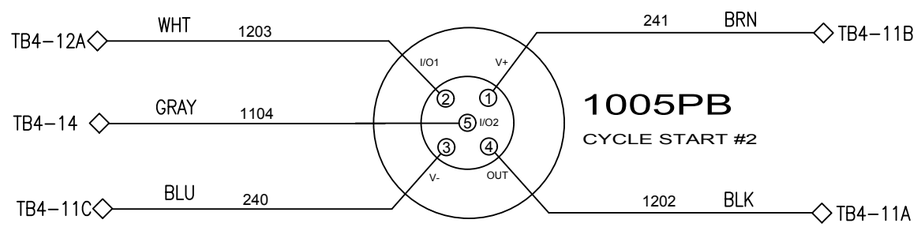
BLK	TB4-3A	1003
BRN	TB4-3B	241
BLU	TB4-3C	240

1008PRX — LONG BAG STRETCHER (OPTIONAL)

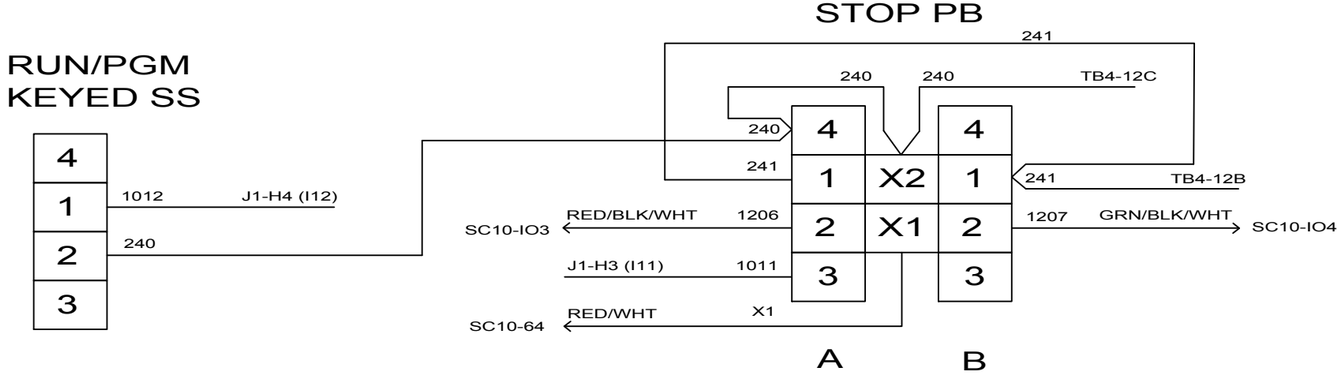
BLK	TB4-8A	1008
BRN	TB4-8B	241
BLU	TB4-8C	240



2 X BANNER K50 W/M12 5 PIN CABLE



EMERGENCY STOP PB



LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

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

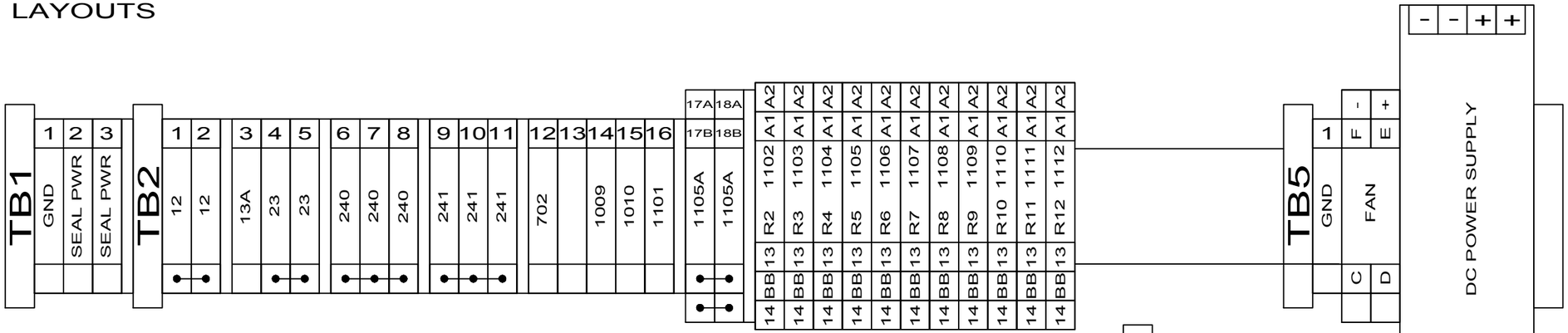
DWG NO.: MkIII-00001-01-REV- REV E

SCALE: NONE | DATE: 10/14/2021 | SHEET 6 OF 10

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	ADDED TERMINAL BLOCKS FOR LIMIT SWITCHES	4/13/2016 BRB	

PRIOR TO SN 3125

MAIN ENCLOSURE TERMINAL STRIP LAYOUTS



NOTE: IF WATER RING PUMP IS USED.
REPLACE FAN MODULE WITH TB5
TERMINALS 2, 3 AND 4

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

M-TEK INC.

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

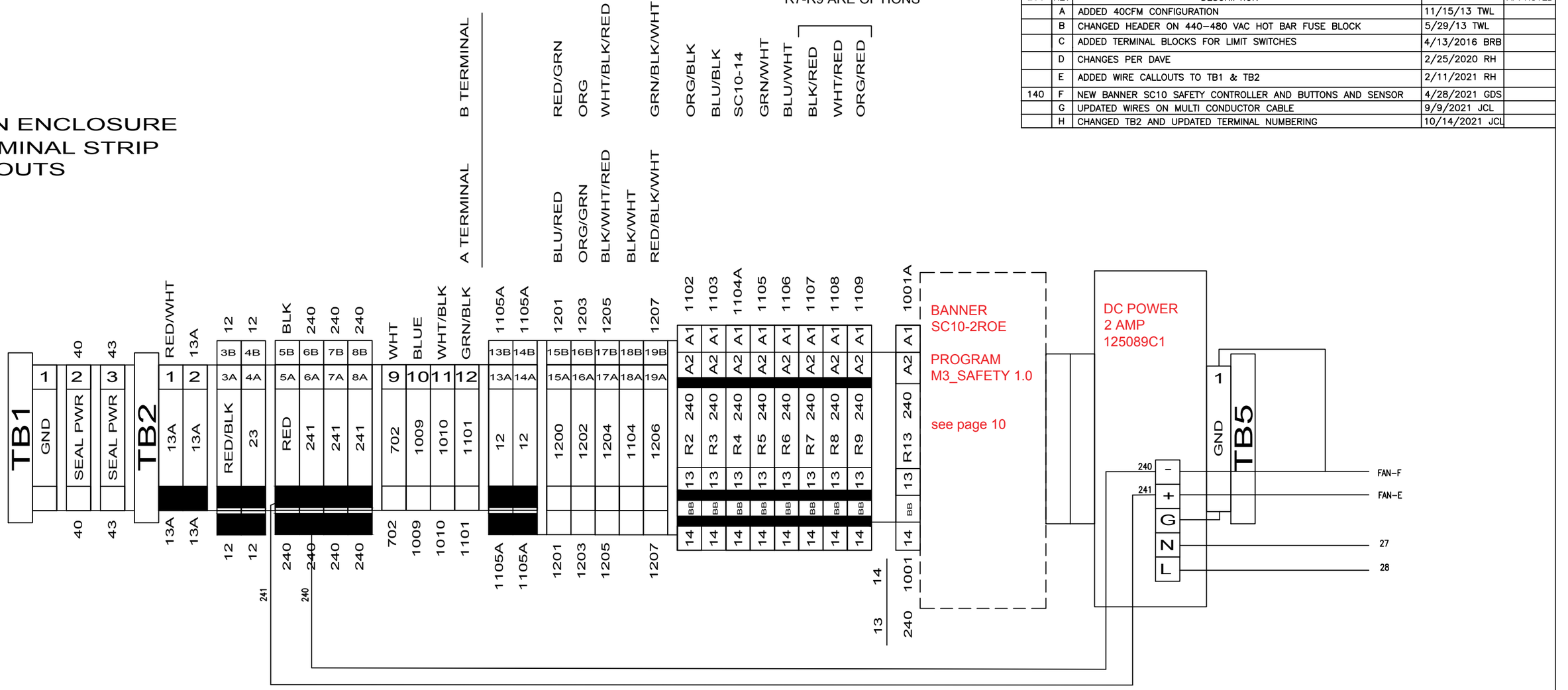
TITLE: Mk III ELECTRICAL SCHEMATIC

DWG NO.: MkIII–00001–01–REV– REV –

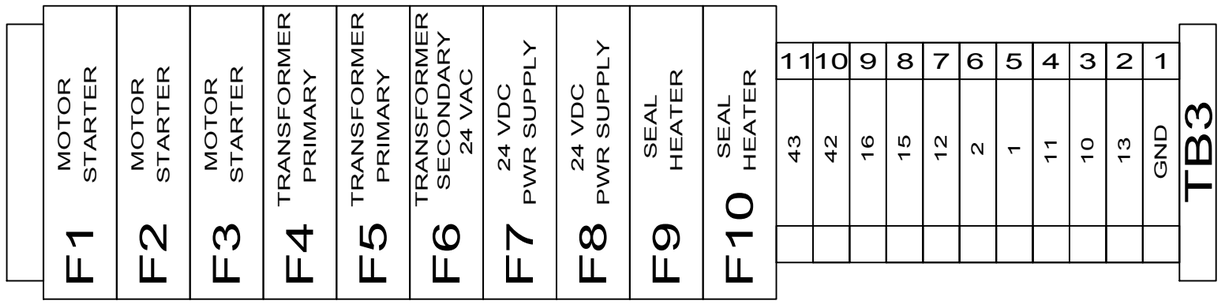
SCALE: NONE | DATE: 01/21/10 | SHEET 7 OF 9

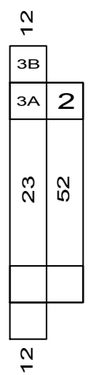
MAIN ENCLOSURE TERMINAL STRIP LAYOUTS

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	ADDED TERMINAL BLOCKS FOR LIMIT SWITCHES	4/13/2016 BRB	
	D	CHANGES PER DAVE	2/25/2020 RH	
	E	ADDED WIRE CALLOUTS TO TB1 & TB2	2/11/2021 RH	
140	F	NEW BANNER SC10 SAFETY CONTROLLER AND BUTTONS AND SENSOR	4/28/2021 GDS	
	G	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/2021 JCL	
	H	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/2021 JCL	



NOTE: ADD IF WATER RING PUMP IS USED.





LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

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

DWG NO.: MkIII–00001–01–REV– REV G

SCALE: NONE | DATE: 10/14/2021 | SHEET 7 OF 10

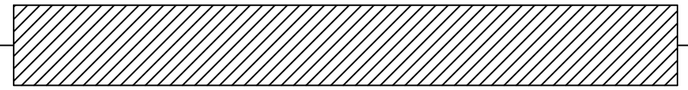
OPERATOR PANEL TO MAIN ENCLOSURE MULTICONDUCTOR CABLE LAYOUT

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440-480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	

PRIOR TO SN 3125

OPERATOR PANEL
COLOR / WIRE# / DEST. / STRIP

RED/WHT	13A	TB4-11	17 1/4"
RED/BLK	23	TB4-12	17"
BLK	240	TB4-10C	6.5"
RED	241	TB4-10B	7.5"
GRN	GND	TB4-13	16"
WHT	702	PLC-J3-V2	24 1/2"
BLU	1009	PLC-J1-H1	22"
WHT/BLK	1010	PLC-J1-H2	23 1/2"
GRN/BLK	1101	PLC-J2-Q1	28"
ORG/BLK	1102	PLC-J2-Q2	28"
BLU/BLK	1103	PLC-J2-Q3	28"
BLK/WHT	1104	PLC-J2-Q4	28"
GRN/WHT	1105	PLC-J2-Q5	28"
BLU/WHT	1106	PLC-J2-Q6	28"
BLK/RED	1107	PLC-J2-Q7	28"
WHT/RED	1108	PLC-J2-Q8	28"
ORG/RED	1109	PLC-J2-Q9	28"
BLU/RED	1110	PLC-J2-Q10	28"
RED/GRN	1111	PLC-J2-Q11	28"
ORG/GRN	1112	PLC-J2-Q12	28"
ORG	SP-1		28"
BLK/WHT/RED	SP-2		28"
WHT/BLK/RED	SP-3		28"
RED/BLK/WHT	SP-4		28"
GRN/BLK/WHT	SP-5		28"



BELDEN #9626 25X18AWG
MULTI CONDUCTOR CABLE
CUT TO 8' 11"

MAIN ENCLOSURE
STRIP TO 30"
COLOR / WIRE# / DEST.

RED/WHT	13A	TB2-3
RED/BLK	23	TB2-4
BLK	240	TB2-6
RED	241	TB2-9
GRN	GND	TB1-1
WHT	702	TB2-12
BLU	1009	TB2-14
WHT/BLK	1010	TB2-15
GRN/BLK	1101	TB2-16
ORG/BLK	1102	R2-A1
BLU/BLK	1103	R3-A1
BLK/WHT	1104	R4-A1
GRN/WHT	1105	R5-A1
BLU/WHT	1106	R6-A1
BLK/RED	1107	R7-A1
WHT/RED	1108	R8-A1
ORG/RED	1109	R9-A1
BLU/RED	1110	R10-A1
RED/GRN	1111	R11-A1
ORG/GRN	1112	R12-A1
ORG	SP-1	
BLK/WHT/RED	SP-2	
WHT/BLK/RED	SP-3	
RED/BLK/WHT	SP-4	
GRN/BLK/WHT	SP-5	

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

m-tek INC.

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC

DWG NO.: MkIII-00001-01-REV- REV —

SCALE: NONE | DATE: 01/21/10 | SHEET 8 OF 9

OPERATOR PANEL TO MAIN ENCLOSURE MULTICONDUCTOR CABLE LAYOUT

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440–480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
140	C	NEW SAFETY CONTROLS	4/28/21 GDS	
	D	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	
	E	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	
	F	ADDED WIRING PART NUMBER	11/23/21 AOK	
	G	UPDATED STRIP LENGTHS	12/9/21 JCL	

OPERATOR PANEL
COLOR / WIRE# / DEST. / STRIP

RED/WHT	X1	ESTOP-X1	11"
RED/BLK	1001	TB4-1A	7.5"
BLK	240	TB4-1C	6.5"
RED	241	TB4-1B	7.5"
GRN	GND	TB4-15	19"
WHT	702	PLC-J3-V2	11"
BLU	1009	PLC-J1-H1	15"
WHT/BLK	1010	PLC-J1-H2	15"
GRN/BLK	1101	PLC-J2-Q1	19"
ORG/BLK	1102	PLC-J2-Q2	19"
BLU/BLK	1103	PLC-J2-Q3	19"
BLK/WHT	1104	TB4-13	19"
GRN/WHT	1105	PLC-J2-Q5	19"
BLU/WHT	1106	PLC-J2-Q6	19"
BLK/RED	1107	PLC-J2-Q7	19"
WHT/RED	1108	PLC-J2-Q8	19"
ORG/RED	1109	PLC-J2-Q9	19"
BLU/RED	1200	TB4-9A	19"
RED/GRN	1201	TB4-10A	19"
ORG/GRN	1202	TB4-11A	19"
ORG	1203	TB4-12A	19"
BLK/WHT/RED	1204	TB4-4A	19"
WHT/BLK/RED	1205	TB4-5A	19"
RED/BLK/WHT	1206	ESTOP-A2	11"
GRN/BLK/WHT	1207	ESTOP-B2	11"

BELDEN #9626 25X18AWG
MULTI CONDUCTOR CABLE
CUT TO 8' 11"

-71612601-

MAIN ENCLOSURE
STRIP TO 30"
COLOR / WIRE# / DEST.

RED/WHT	X1	SC10-64
RED/BLK	1001	R13-14
BLK	240	TB2-5B
RED	241	TB2-5A
GRN	GND	TB1-1
WHT	702	TB2-9
BLU	1009	TB2-10
WHT/BLK	1010	TB2-11
GRN/BLK	1101	TB2-12
ORG/BLK	1102	R2-A1
BLU/BLK	1103	R3-A1
BLK/WHT	1104	TB2-18A
GRN/WHT	1105	R5-A1
BLU/WHT	1106	R6-A1
BLK/RED	1107	R7-A1
WHT/RED	1108	R8-A1
ORG/RED	1109	R9-A1
BLU/RED	1200	TB2-15A
RED/GRN	1201	TB2-15B
ORG/GRN	1202	TB2-16A
ORG	1203	TB2-16B
BLK/WHT/RED	1204	TB2-17A
WHT/BLK/RED	1205	TB2-17B
RED/BLK/WHT	1206	TB2-19A
GRN/BLK/WHT	1207	TB2-19B

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

CV·TEK

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC
MKIII_XE105

DWG NO.: MkIII–00001–01–REV– REV G

SCALE: NONE | DATE: 12/9/2021 | SHEET 8 OF 10

FUSE SIZE CHARTS

HOT BAR

208-220 VAC 1 PHASE 50/60HZ			
FUSE	10CFM	PIAB	ALTRAN
F1	AM-4	NONE	
F2	AM-4	NONE	
F3	NONE	NONE	
F4	AM-2	AM-2	AM-16
F5	AM-2	AM-2	AM-16
F6	AM-4	AM-4	
F7	AM-1	AM-1	
F8	AM-1	AM-1	
F9	AM-8	AM-8	
F10	AM-8	AM-8	
MOTOR STARTER OL SETTING			
	3.8	NA	

380-415 VAC 1 PHASE 50HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-10		
F5	AM-10		
F6	AM-4		
F7	AM-1		
F8	AM1		
F9	AM-8		
F10	AM-8		
MOTOR STARTER OL SETTING			
	NA		

440-480 VAC 1 PHASE 60HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-8		
F5	AM-8		
F6	AM-4		
F7	AM-1		
F8	AM-1		
F9	AM-8		
F10	AM-8		
MOTOR STARTER OL SETTING			
	NA		

575 VAC 3 PHASE 60HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F2	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F3	AM-	AM-	AM-	AM-	AM-	AM-	AM-5
F4	AM-	AM-	AM-	AM-	AM-	AM-	AM-7
F5	AM-	AM-	AM-	AM-	AM-	AM-	AM-7
F6	AM-	AM-	AM-	AM-	AM-	AM-	AM-4
F7	AM-	AM-	AM-	AM-	AM-	AM-	AM-1
F8	AM-	AM-	AM-	AM-	AM-	AM-	AM-1
F9	AM-	AM-	AM-	AM-	AM-	AM-	AM-8
F10	AM-	AM-	AM-	AM-	AM-	AM-	AM-8
MOTOR STARTER OL SETTING							
							3.5

208-240 VAC 3 PHASE 50/60HZ								
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	ALTRAN	40CFM
F1	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F2	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F3	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16		AM-12
F4	AM-2	AM-2	AM-2	AM-2	AM-2	AM-2	AM-16	AM-2
F5	AM-2	AM-2	AM-2	AM-2	AM-2	AM-2	AM-16	AM-2
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4		AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1		AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1		AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8		AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8		AM-8
MOTOR STARTER OL SETTING								
	2.6	4.8	6.0	6.1	4.0	8.5		9.0

380-415 VAC 3 PHASE 50HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F5	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
MOTOR STARTER OL SETTING							
	1.6	2.0	3.3	3.5	2.5	3.9	3.9

440-480 VAC 3 PHASE 60HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	40CFM
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F5	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F9	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F10	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
MOTOR STARTER OL SETTING							
	1.3	2.4	3.0	2.8	2.5	3.9	5.0

IMPULSE

208-240 VAC 3 PHASE 50/60HZ						
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60
F1	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F2	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F3	AM-4	AM-8	AM-10	AM-10	AM-6	AM-16
F4	AM-16	AM-16	AM-16	AM-16	AM-16	AM-16
F5	AM-16	AM-16	AM-16	AM-16	AM-16	AM-16
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
STANDARD F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
HIGH ENERGY F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING						
	2.6	4.8	6.0	6.1	4.0	8.5

380-415 VAC 3 PHASE 50HZ							
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60	LEM60
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6	AM-6
F4	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F5	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10	AM-10
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
STANDARD F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
HIGH ENERGY F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING							
	1.6	2.0	3.3	3.5	2.5	3.9	3.9

440-480 VAC 3 PHASE 60HZ						
FUSE	10CFM	21CFM	28CFM	35CFM	LEM15/20	LEM60
F1	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F2	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F3	AM-4	AM-4	AM-6	AM-6	AM-4	AM-6
F4	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F5	AM-8	AM-8	AM-8	AM-8	AM-8	AM-8
F6	AM-4	AM-4	AM-4	AM-4	AM-4	AM-4
F7	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
F8	AM-1	AM-1	AM-1	AM-1	AM-1	AM-1
STANDARD F9	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
STANDARD F10	AM-20	AM-20	AM-20	AM-20	AM-20	AM-20
HIGH ENERGY F9	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
HIGH ENERGY F10	AM-32	AM-32	AM-32	AM-32	AM-32	AM-32
MOTOR STARTER OL SETTING						
	1.3	2.4	3.5	2.8	2.5	3.9

208-220 VAC 1 PHASE 50/60HZ			
FUSE	PIAB		
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-16		
F5	AM-16		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
STANDARD F10	AM-20		
HIGH ENERGY F9	AM-32		
HIGH ENERGY F10	AM-32		
MOTOR STARTER OL SETTING			

380-415 VAC 1 PHASE 50HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-10		
F5	AM-10		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
STANDARD F10	AM-20		
HIGH ENERGY F9	AM-32		
HIGH ENERGY F10	AM-32		
MOTOR STARTER OL SETTING			

440-480 VAC 1 PHASE 60HZ			
FUSE	PIAB	-	-
F1	NONE		
F2	NONE		
F3	NONE		
F4	AM-8		
F5	AM-8		
F6	AM-4		
F7	AM-1		
F8	AM-1		
STANDARD F9	AM-20		
STANDARD F10	AM-20		
HIGH ENERGY F9	AM-32		
HIGH ENERGY F10	AM-32		
MOTOR STARTER OL SETTING			

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
	A	ADDED 40CFM CONFIGURATION	11/15/13 TWL	
	B	CHANGED HEADER ON 440-480 VAC HOT BAR FUSE BLOCK	5/29/13 TWL	
	C	ADDED 40CFM PUMP FOR 380-415VAC	6/18/2014 BRB	

M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: G. JOHNSON

TITLE: Mk III ELECTRICAL SCHEMATIC

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

DWG NO.: MkIII-00001-01-REV-C

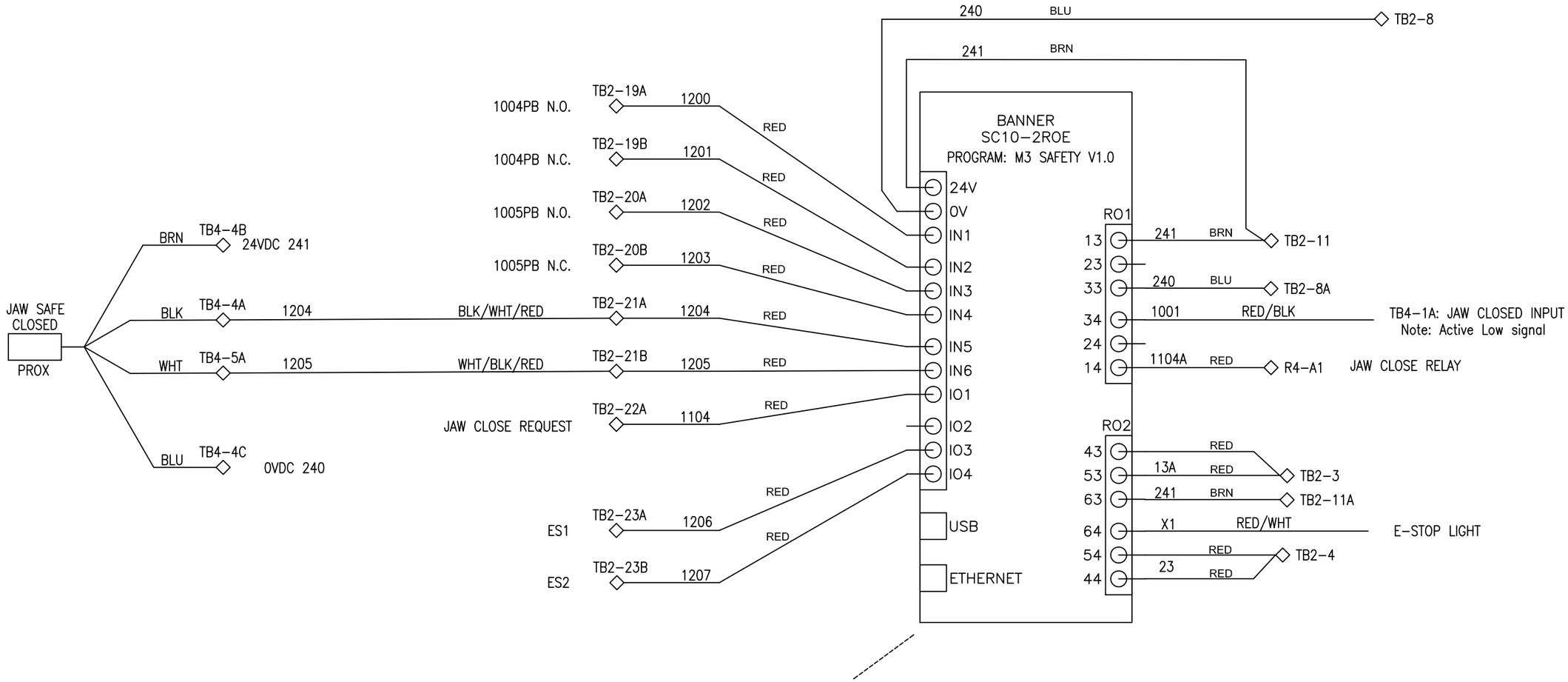
REV C

SCALE: NONE | DATE: 12/08/2014 | SHEET 9 OF 9

SAFETY CONTROLLER DETAILS

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
140	A	NEW SAFETY CONTROLS. NEW SHEET 10	04/28/21 GDS	
	B	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	

PRIOR TO SN 3125



On SC10 use one wire per screw terminal. Use 20 AWG wire and ferules.

LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

M-TEK INC.

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

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON

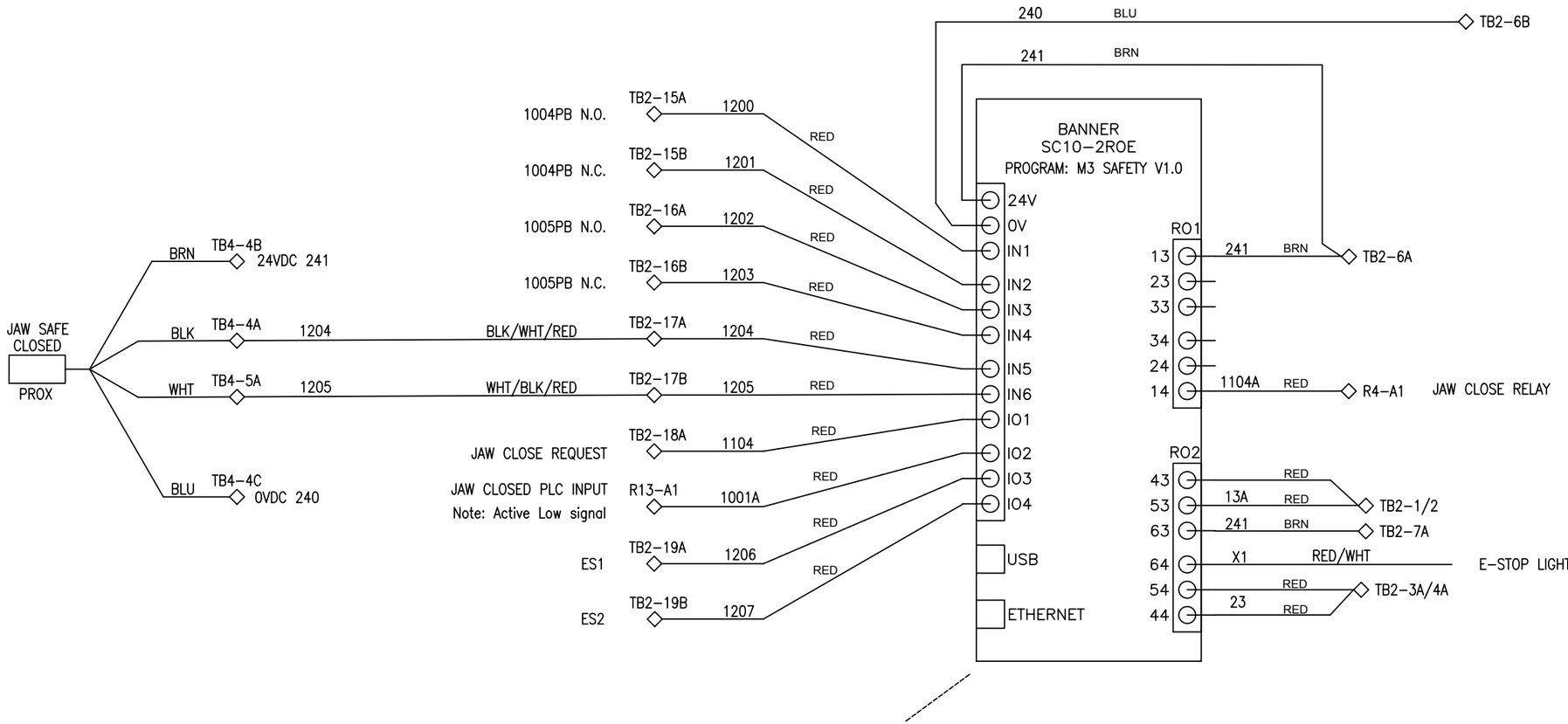
TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105

DWG NO.: MkIII-00001-01-REV-C REV B

SCALE: NONE | DATE: 9/9/2021 | SHEET 10 OF 10

SAFETY CONTROLLER DETAILS

REVISIONS				
ECO	REV	DESCRIPTION	DATE	APPROVED
140	A	NEW SAFETY CONTROLS. NEW SHEET 10	04/28/21 GDS	
	B	UPDATED WIRES ON MULTI CONDUCTOR CABLE	9/9/21 JCL	
	C	CHANGED TB2 AND UPDATED TERMINAL NUMBERING	10/14/21 JCL	



On SC10 use one wire per screw terminal. Use 20 AWG wire and ferules.

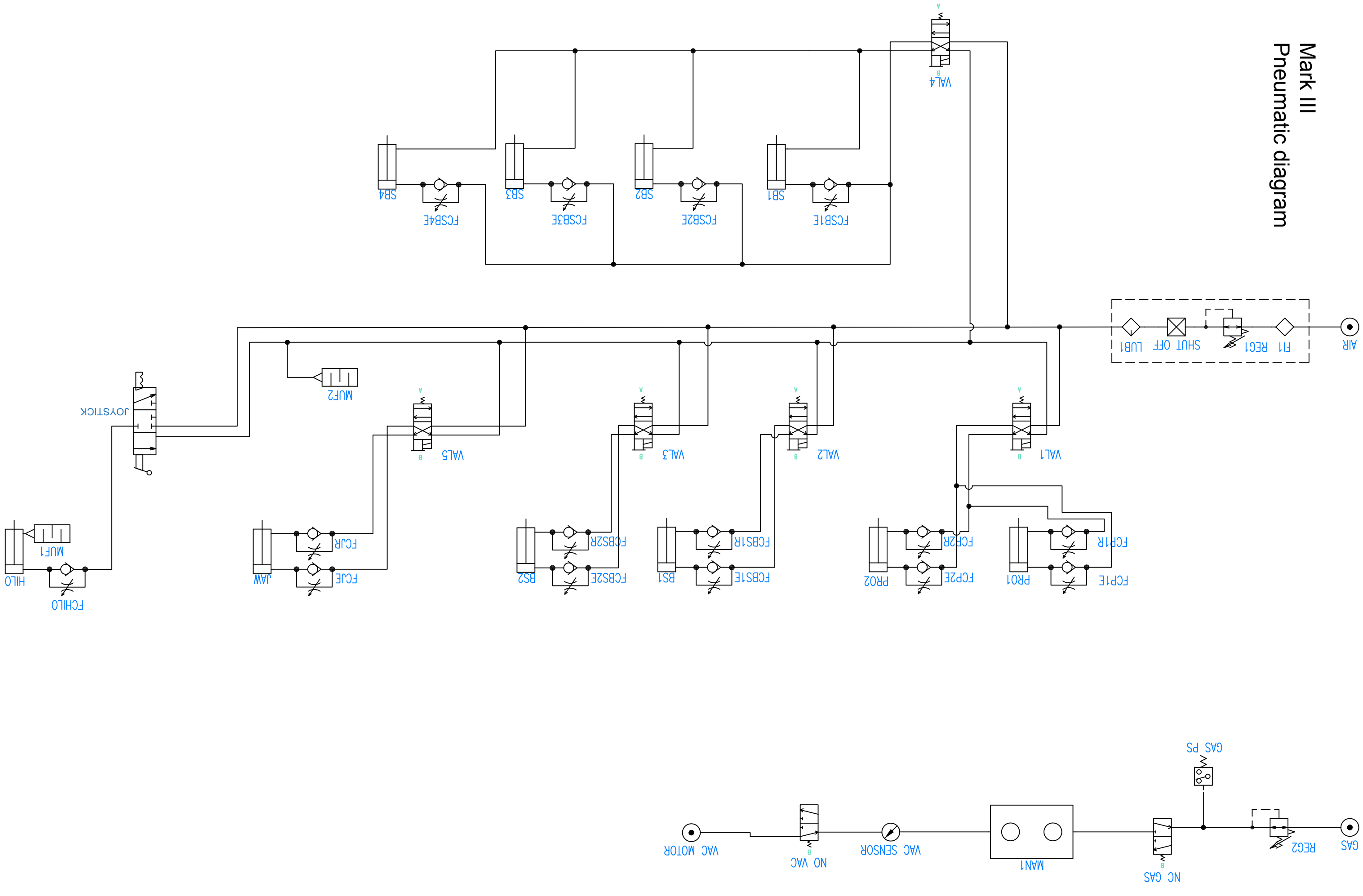
LEGEND
10 & 11 = 240 OR 120 VAC
23 = 24 VAC
12 = 24 VAC COMMON
241 = 24 VDC
240 = 24 VDC COMMON

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

M-TEK INC.

APPROVED MFG: APPROVED ENG:
DRAWN BY: G. JOHNSON
TITLE: Mk III ELECTRICAL SCHEMATIC MKIII_XE105
DWG NO.: MkIII-00001-01-REV-C
REV C
SCALE: NONE DATE: 10/11/2021 SHEET 10 OF 10

Mark III
Pneumatic diagram



Corr-Vac© MARK III PARTS

1. OVERVIEW OF TYPICAL MAIN CABINET.

2. VACUUM/GAS FLUSH MANIFOLD PARTS.
   Many drawings show a ”typical” assembly. Always compare your machine with the drawings. If your machine is different from the drawings, you can select the necessary parts from the FITTINGS sections of this manual.

3. VACUUM PUMPS (INCLUDING FILTERS AND COOLING SYSTEMS).

4. PNEUMATIC PARTS.
   The table at the back of this section shows the correct electrical and pneumatic fittings needed for each Mac valve, in each machine model. For example, if you are looking for the pneumatic fittings to go on solenoid valve No. 2, on a Mark IV with Micro-Controller, first turn to the drawing and parts list for PNEUMATIC SOLENOID VALVE.

   Ref. No. C is 14, which is CV-TEK part No. 74204201. Ref.

   No. D is 12 (74204601) and 13 (74203801).

5. FITTINGS.
   This section includes full-sized templates for each size of pipe, tubing, or fittings.

   You will then find drawings of each kind of fittings, with available sizes.

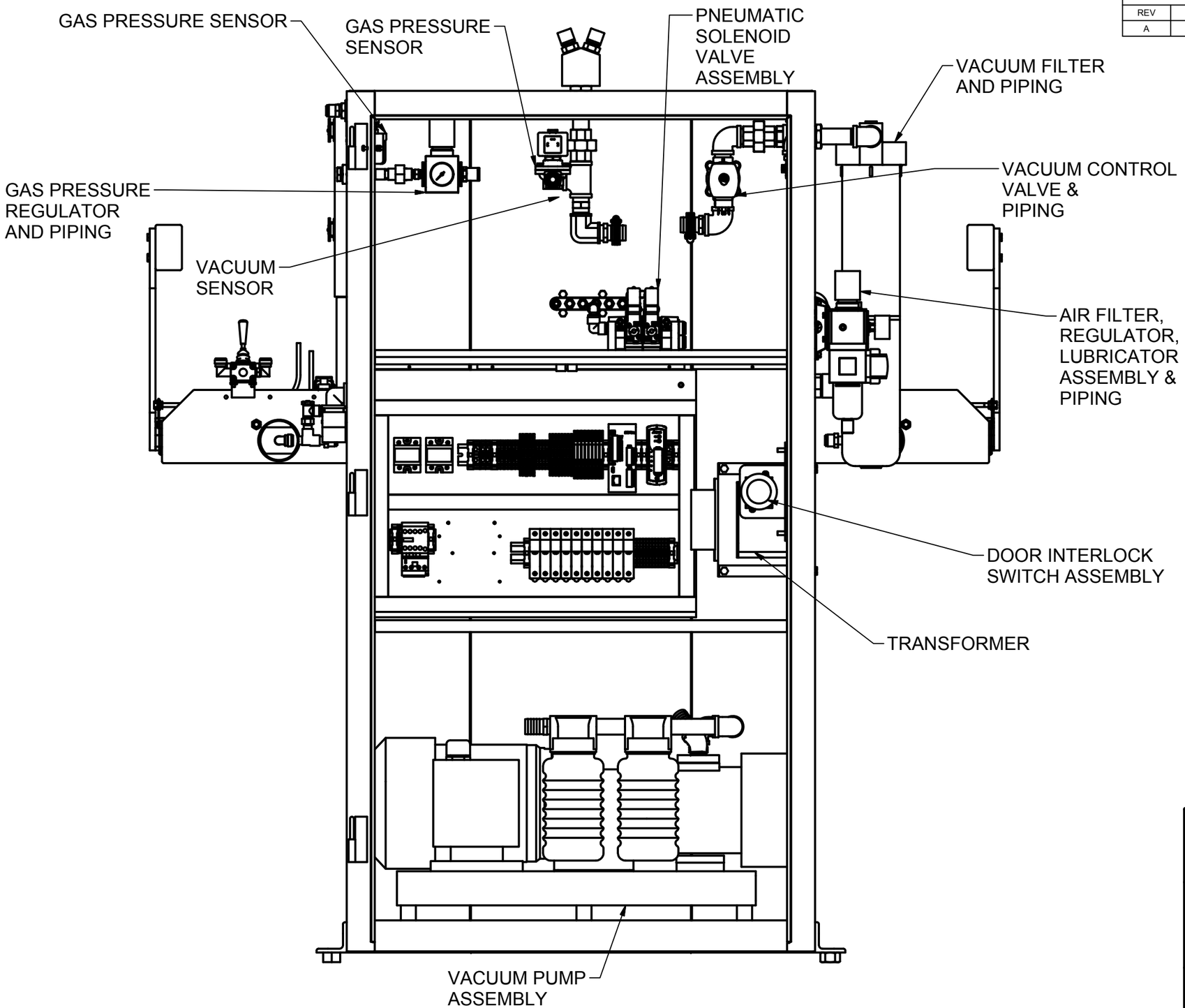
6. ELECTRICAL CONTROL PARTS.

7. CONTROL BOX PARTS.

8. HEAD PARTS.

9. MISCELLANEOUS.

REVISION			
REV	DESCR	DATE	APRVD
A	INITIAL RELEASE	10/1/2021	AOK



CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

TITLE:

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

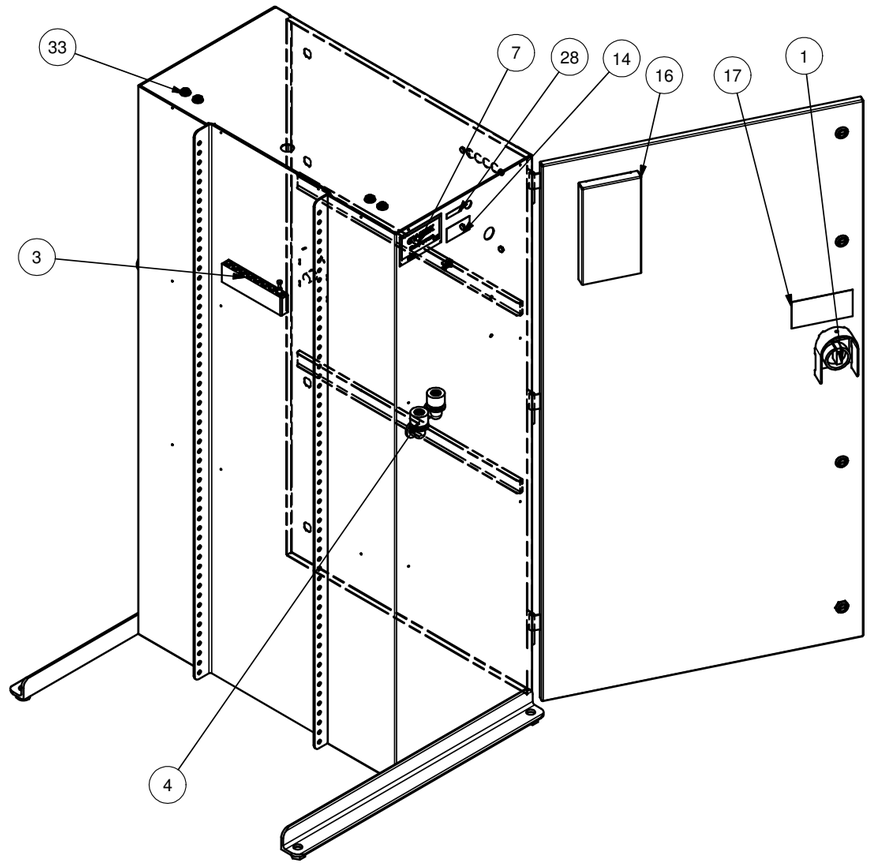
DWG NO.: MK3 MACHINE A

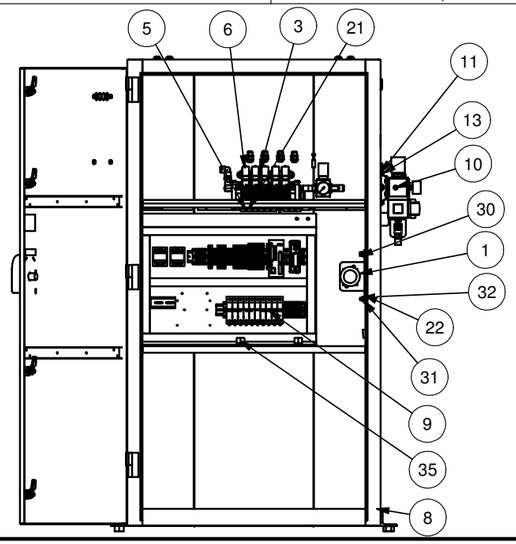
SCALE: N/A DATE: SHEET 1 OF 1

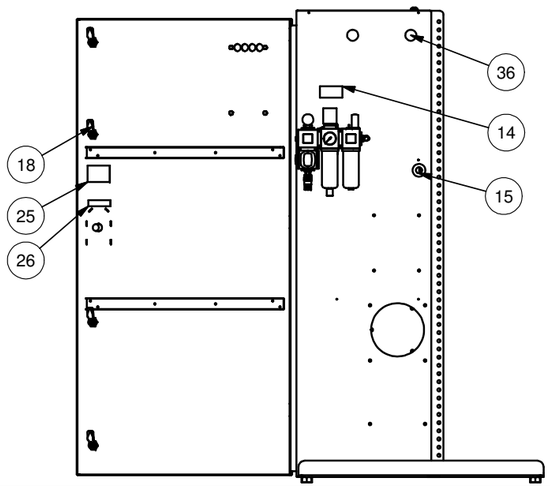
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI
B	CAD UPDATED TO MATCH INFOR	12/23/2024	SP

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	122507C1	MK III DISCONNECT SWITCH ASSEMBLY	2
2	123403C1	MK III DISCONNECT ROD	1
3	69200101	Delrin Pneumatic Manifold Assembly With Fittings Mark III/IV	1
4	71604701	CORD GRIP 0.250-.375 3/4 90 DEG CE RATED	2
5	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	9
6	75109501	1/4-20 X 1/2 LNG HEX HEAD CAP SCREW, S/S	6
7	79200402	BLANK NAME SERIAL NUMBER PLATE 3 X 5 IN CV-TEK LOGO	1
8	86200902A	PYLON, MARK III, SINGLE DOOR VERSION	1
9	MA110-0032	BASE MK3 ELECTRICAL PANEL	1
10	129809C1	FRL L2R W/ SHUTOFF	1
11	ASTM F436 - 5/16	Washer A	5
12	75109701	1/4-20 SEALING NUT	2
13	ANSI/ASME B18.2.1 - 1/4-20 UNC - 0.5	Hex Bolt - UNC (Regular Thread - Inch)	4
14	79002301	WARNING COMPRESSED AIR LABEL	2
15	71604901	CORD GRIP,.375-.437, 3/4 WOOD	1
16	76203201	DOOR VENT COVER, MKIII/MKIV Hi OXYGEN	1
17	79002501	WARNING HAZARDOUS VOLTAGE	1
18	75002801A	CABINET DOOR LATCH, 1/4 TURN FLAT HEAD SLOTTED	4
19	110519C1	1/4-20 X 3/8 LNG HEX HEAD CAP SCREW, S/S	4
20	63102001	MK3 BAG STRETCHER 5 MAC VALVE ASSEMBLY	1
21	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	9
22	122648C1	MK III DISCONNECT BRACKET	1
23	79002401	ELECTRICAL HAZARD LABEL	1
24	74300301	1/4F PAKER COUPLER	1
25	79000601	CAUTION LABEL FOR WIRES	1
26	79001501	DECAL24 VAC COMPONENTS	1
27	79500701	3/8 I.D. GROMMET	1
28	79200501	NAME PLATE GAS 1/2 X 1-3/4	1
29	71612701	WOODHEAD GROMMET 00-4981	1
30	71605701	GROUND LUG	1
31	75118001	1/4 FLAT WASHER (.281 I.D. x .500 O.D. x .078 THK.)	2
32	75103801	1/4-20 HEX NUT, S/S	2
33	110506C1	1/4 BULKHEAD UNION PLASTIC	4
34	71601401	1/2 NPT SEALING NUT	2
35	71605201	CORD GRIP, .35 - .47 DIA., 1/2 NPT GREY	2
36	122266C1	HOLE SEAL, 1/2", S/S	4
37	75003001	CABLE TIE MOUNTING BASE, 1/4 SCREW SIZE, PANDUIT #TM3S25-C	1
38	110624C1	1/4-20 x 3/8 LG. PAN HEAD	1
39	91847A029	1/4-20 HEX JAM NUT, S/S	4
40	75106401	1/4-20 X 3/4 LNG HEX HEAD CAP SCREW, S/S	1
41	79001101	DECAL, PROGRAM 1-4 WRITE-ON	4
42	74203301	3/8 O.D. TUBE PLUG, PLASTIC, ALKON	1







CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED
NOMINAL = ± ?
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

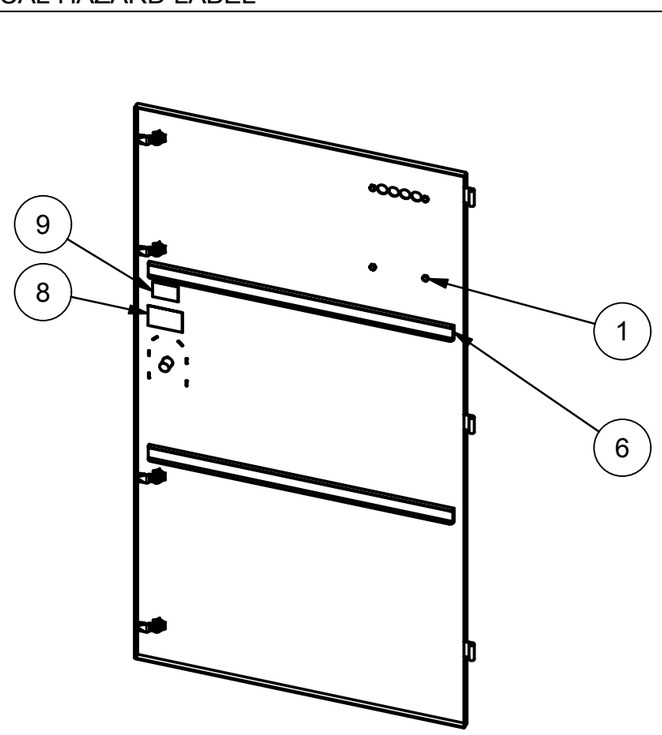
TITLE: MK3 BASE MACHINE

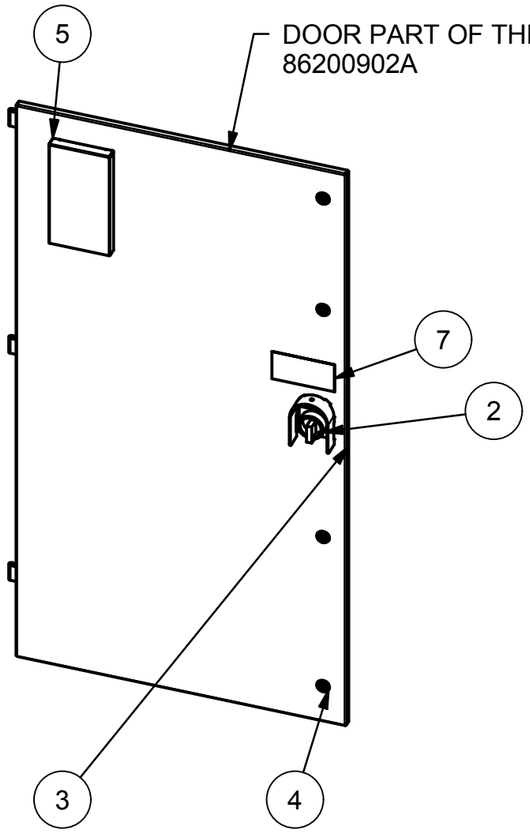
DWG NO.: MA080-0010 B

SCALE: N/A | DATE: 6/25/2018 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	110519C1	1/4-20 X 3/8 LNG HEX HEAD CAP SCREW, S/S	4
2	122507C1	MK III DISCONNECT SWITCH ASSEMBLY	1
3	125503C1	MK3 DOOR WELDMENT	1
4	75002801A	CABINET DOOR LATCH, 1/4 TURN FLAT HEAD SLOTTED	4
5	76203201	DOOR VENT COVER, MKIII/MKIV Hi OXYGEN	1
6	113066C2	Stripping, PVC foam 1/4 X 1, 50 FT ROLL	2
7	79002501	WARNING HAZARDOUS VOLTAGE	1
8	79000601	CAUTION LABEL FOR WIRES	1
9	79002401	ELECTRICAL HAZARD LABEL	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/16/2018	N.B
B	ADDED 3 CAUTION LABELS	11/11/2024	VK
C	DOOR PART OF THE PYLON	1/29/2025	CI





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

TITLE:

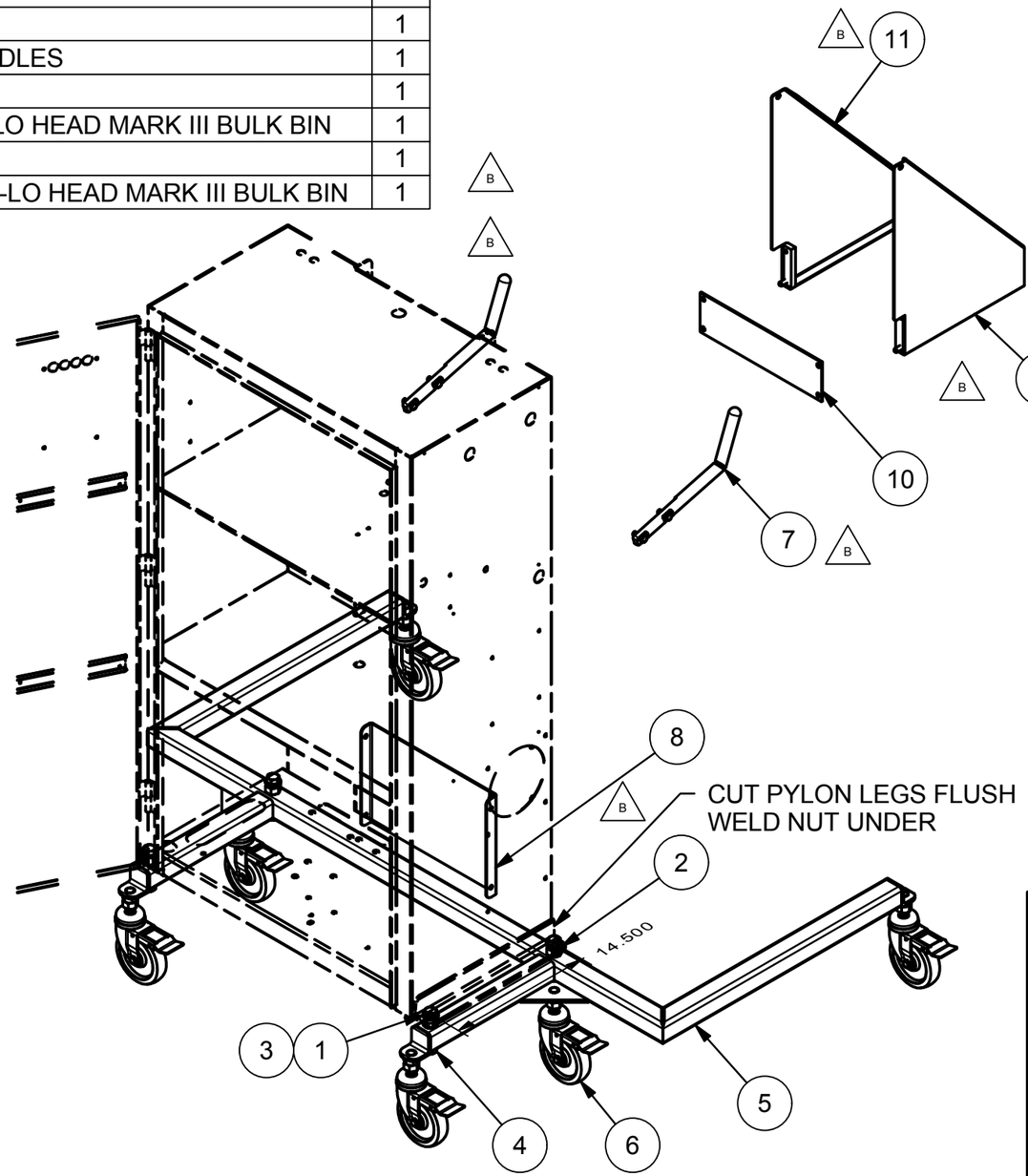
MK3 PYLON DOOR ASSEMBLY

DWG NO.: MA080-0011 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120399C1	5/8 FLAT WASHER, 1.313 O.D., 0.13 THCK, S/S	8
2	75104501	3/4-10 HEX NUT, S/S	2
3	75116101	5/8-11 X 3-3/4 LNG HEX HEAD CAP SCREW, S/S	4
4	75116901	5/8-11 HEX NUT, S/S	4
5	76209201	MKIII LEG FRAME BULK BIN	1
6	MA082-0002	CASTERS ASSEMBLY 6X	1
7	MA265-0020	MK3 54 AND 63 POSITIONING HANDLES	1
8	76204601A	BUMPER, MK III BULK BIN	1
9	76209401A	SPACER, 14.00 IN. LEFT HAND HI-LO HEAD MARK III BULK BIN	1
10	76111601A	TIE BAR, HI-LO HEAD SPACER	1
11	76209301A	SPACER, 14.00 IN. RIGHT HAND HI-LO HEAD MARK III BULK BIN	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	N.B
B	ADDED: 76204601, 76209401, 76111601, 76209301	4/18/2022	PV



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.I.

TITLE:

BULK BIN CHASSIS , ROLL AROUND

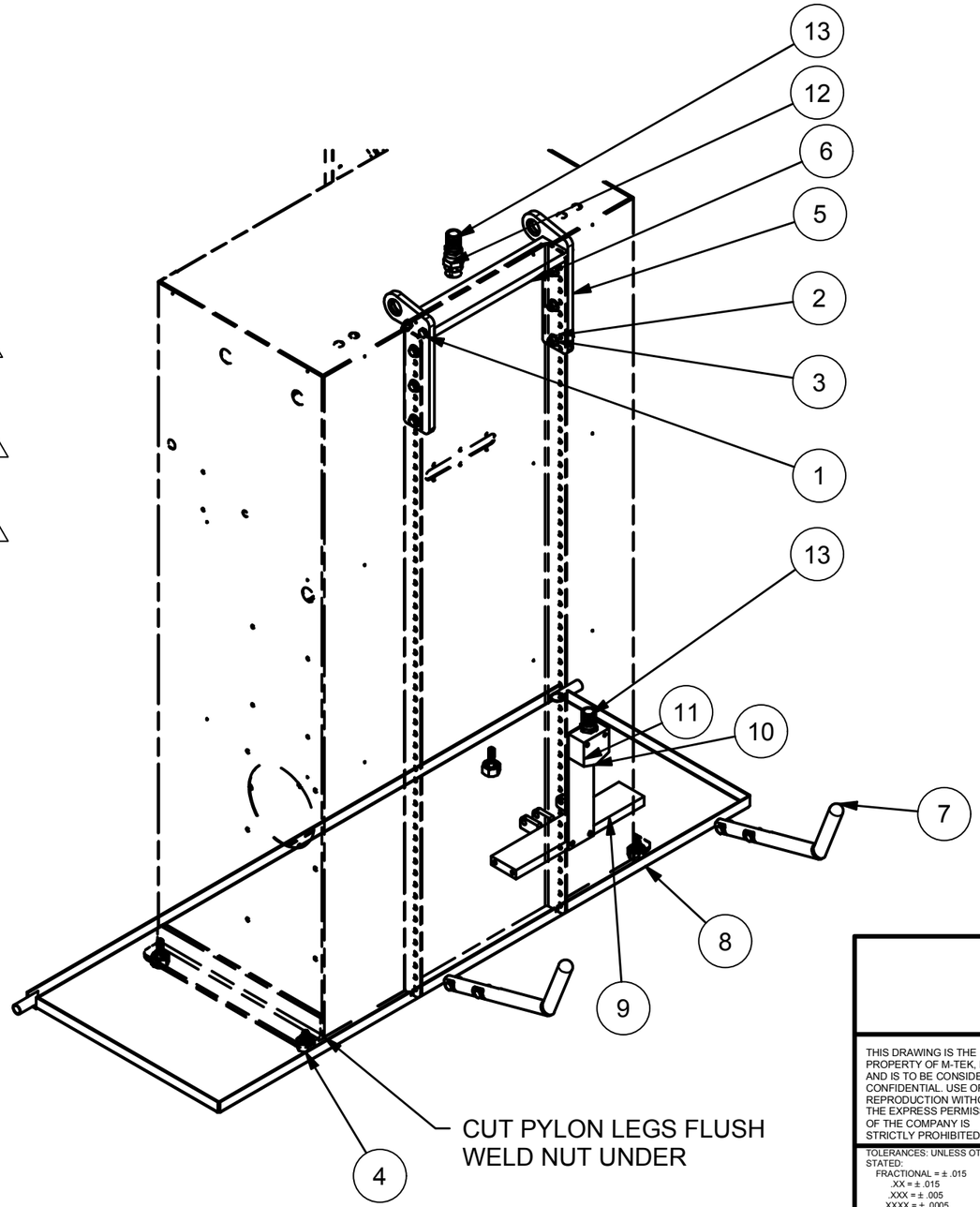
DWG NO.: MA081-0001 B

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	
1	110834C1	3/8-16 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S	10	
2	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	12	
3	75104201	3/8-16 HEX NUT, S/S	6	
4	75104501	3/4-10 HEX NUT, S/S	2	
5	76209001	LIFT PLATE MARK III HOIST	2	
6	76209101	CROSS BAR MK III HOIST	1	
7	MA265-0020	MK3 54 AND 63 POSITIONING HANDLES	1	
8	76000201	Pylon Drip Pan; Mark III	1	
9	96100101	UPPER CYLINDER MOUNTING FRAME MODIFED HI LO HEAD ROLL AROUND, HOIST, CONVERTIBLE MK II	1	B
10	76124800	VACUUM-"Y" STANDOFF ROLL AROUND, HOIST & CONVERTIBLE MK III	1	B
11	99200101	VACUUM Y MODIFIED ROLL AROUND, HOIST, CONVERTIBLE MARK III	1	B
12	74307401	3/4 COUPLING	1	
13	74103301	1 X 3/4 NPT MALE HOSE BARB	2	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI
B	ADDED PARTS 9,10&11	8/22/2023	RB
C	ADD REQUESTE FITTINGS	4/9/2025	CI



M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

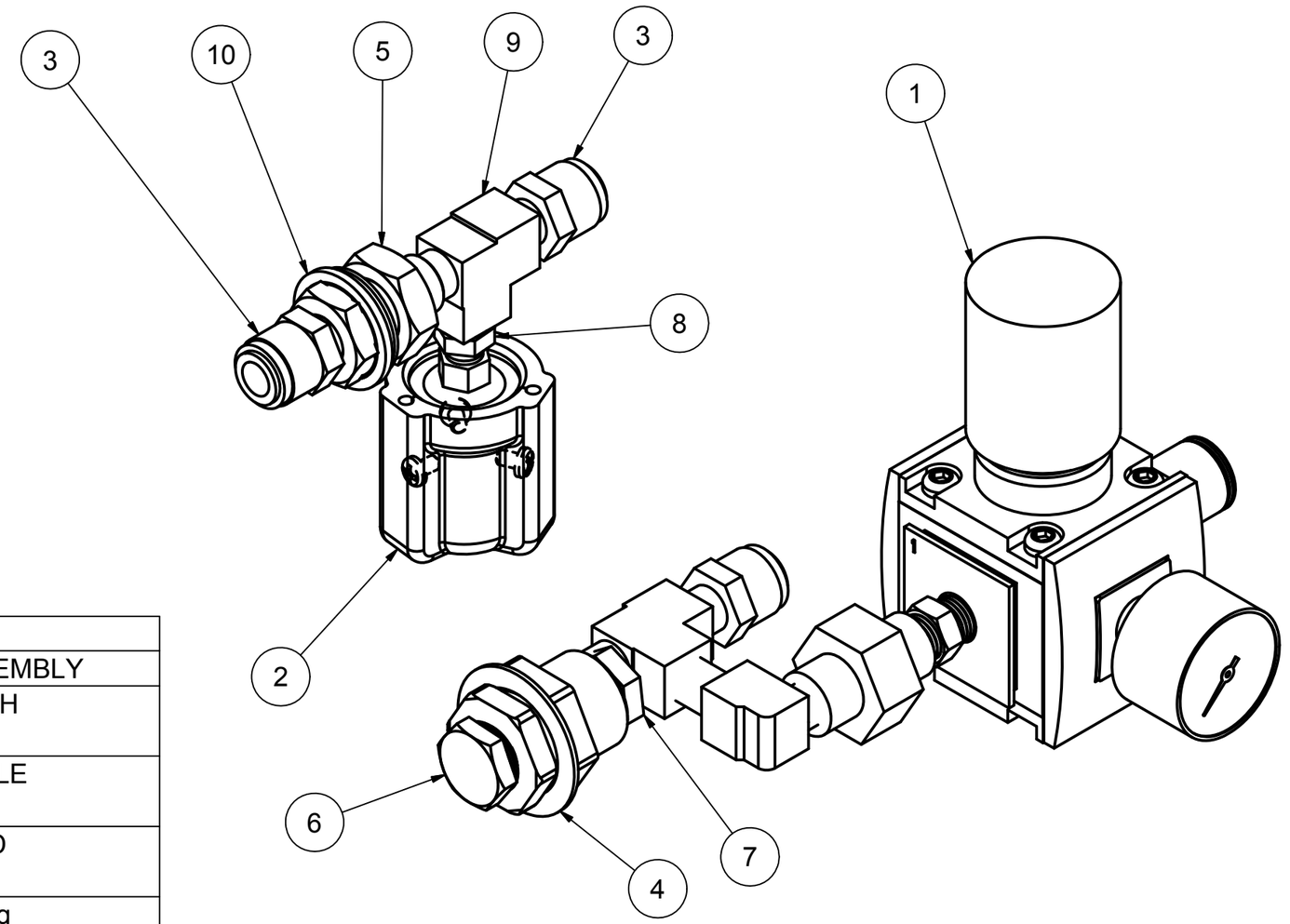
TITLE: BULK BIN CHASSIS , SUSPENDED

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA081-0002 C

SCALE: N/A | DATE: | SHEET 1 OF 1

REVISION			
REV	DESCR	DATE	APRVD
1	INITIAL RELEASE	7/21/2021	AOK



Parts List

1	1	129929C1	MARK 3 REGULATOR ASSEMBLY
2	1	63100301	HOBBS PRESSURE SWITCH ASSEMBLY
3	2	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC
4	1	74300401	1/2 NPT X 1 1/2 BULK HEAD COUPLING
5	1	74300501	1/4 X 1-1/2 bulkhead coupling
6	1	74301901	1/2 PLUG HEX HEAD HOLLOW
7	1	74302301	1/2 NPT MALE x 3/8 NPT FEMALE HEX HEAD BUSHING, BRASS
8	1	74302501	1/4 NPT MALE X 1/8 NPT FEMALE HEX HEAD BUSHING
9	1	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS
10	1	74502404	PRESSURE-SEALING WASHER 3/4" S/S

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

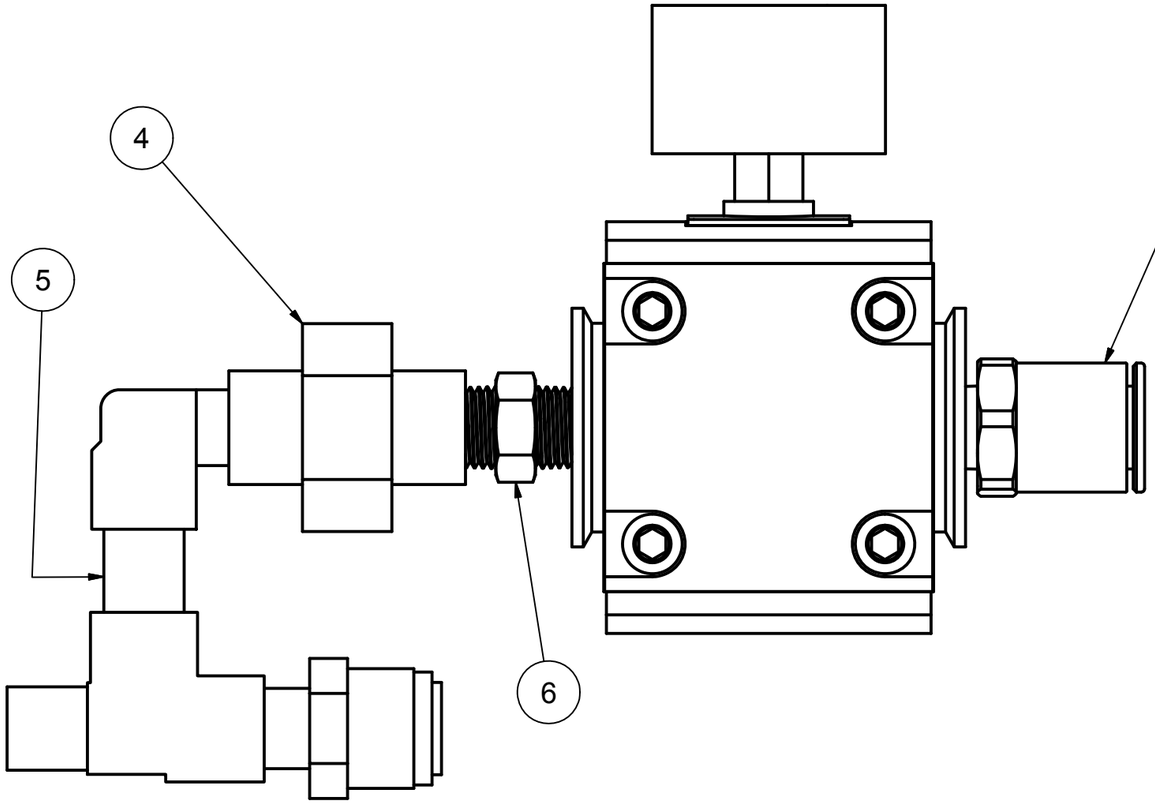
DRAWN BY: C.ILONTA

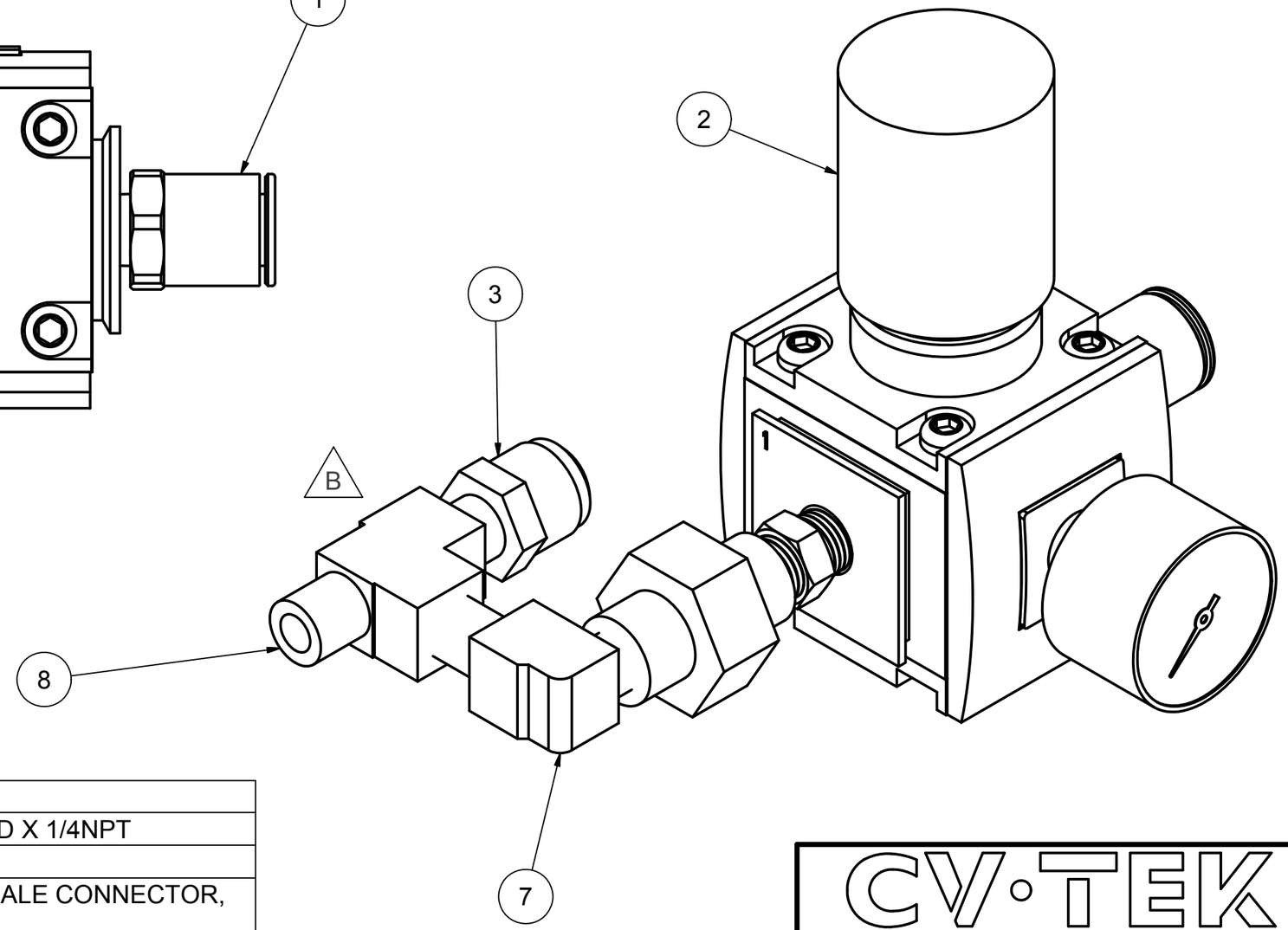
TITLE: GAS PRESSURE REGULATOR AND PIPING

DWG NO.: MA101-0007

SCALE: N/A | DATE: | SHEET 1 OF 1

REVISION			
REV	DESCR	DATE	APRVD
A	INITIAL RELEASE	7/22/2021	AOK
B	UPDATED INCORRECT FITTINGS	9/20/2021	AOK





Parts List

1	1	268P-08-04	FITTING, TBG, STR. 1/2OD X 1/4NPT
2	1	129508C1	REGULATOR
3	1	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC
4	1	74301201	1/4 UNION
5	1	74303101	1/4 CLOSE NIPPLE
6	1	74303701	1/4 NPT hex nipple - long
7	1	74304401	1/4 STREET ELBOW, EXTRUDED
8	1	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: akalina

TITLE: MARK 3 REGULATOR ASSEMBLY

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

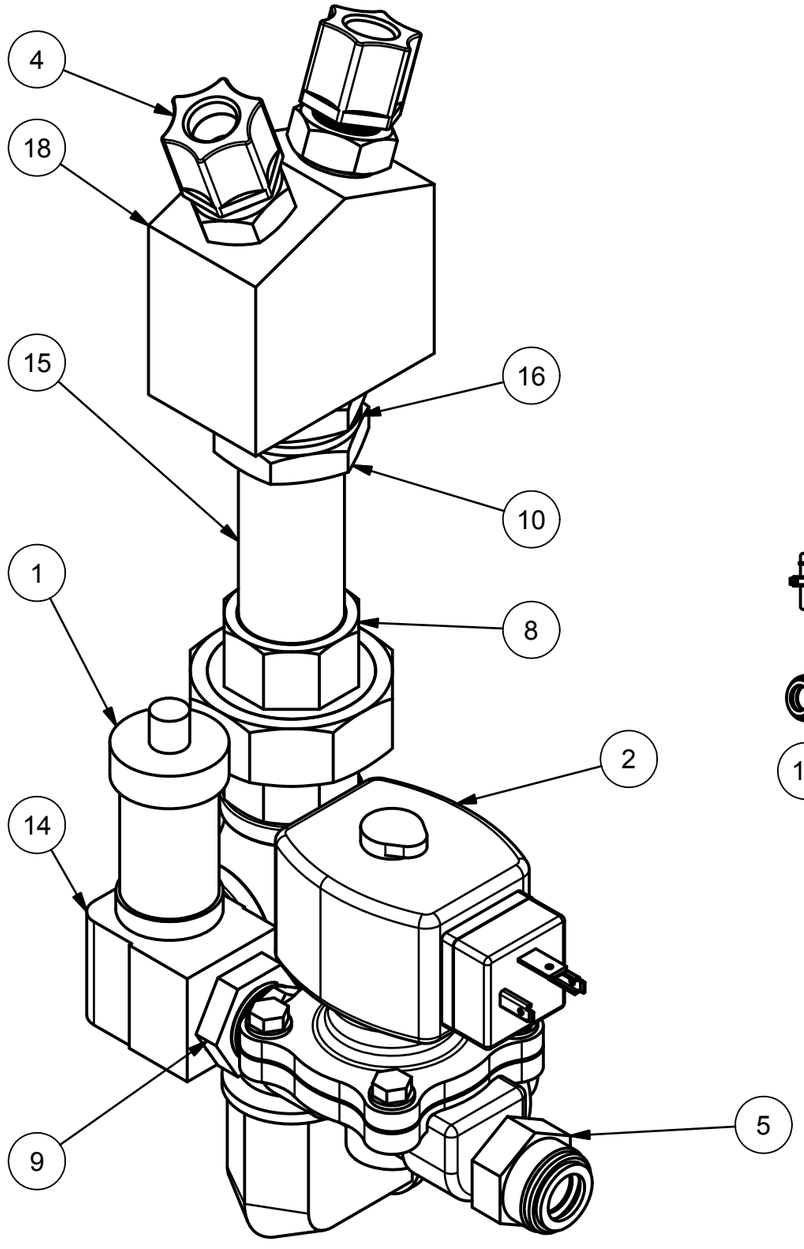
DWG NO.: 129929C1 A

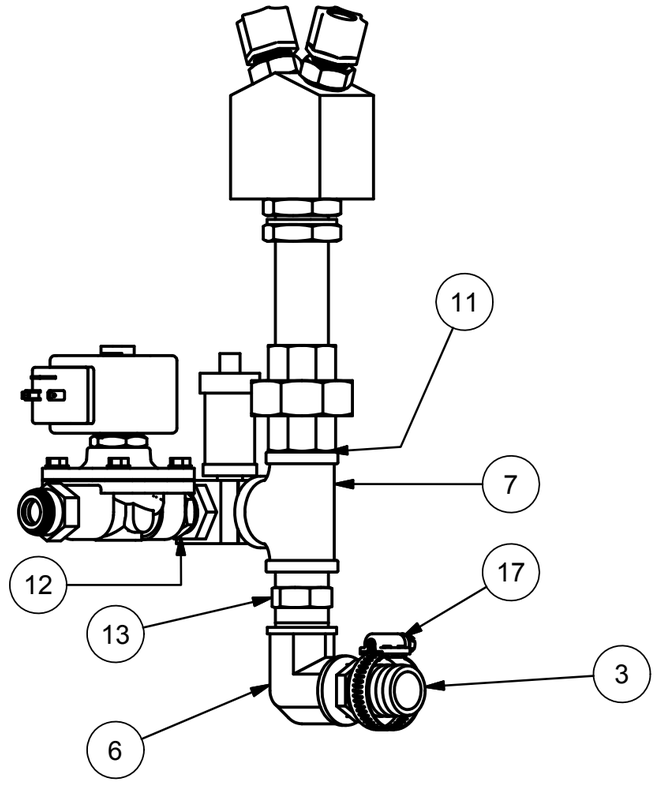
SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	121302C 1	ASHCROFT VACUUM SENSOR	1
2	73102201	VALVE ASCO 3/8 NC BRASS 120VAC	1
3	74103301	1 X 3/4 NPT MALE HOSE BARB	1
4	74200601	1/2 TUBE X 1/2 NPT JACO MALE CONN., PLASTIC	2
5	74203101	1/2 O.D. TUBE X 3/8 NPT MALE CONNETOR, PLASTIC	1
6	74300701	3/4 NPT FEMALE ELBOW, FORGED BRASS	1
7	74300901	3/4 NPT FEM TEE FORGED	1
8	74301501	3/4 UNION, CAST	1
9	74302401	3/4 NPT MALE X 1/2 NPT FEMALE HEX HEAD BUSHING	1
10	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
11	74303401	3/4 CLOSE NIPPLE	1
12	74303601	1/2M X 3/8M HEX REDUCER NIPPLE	1
13	74304101	3/4 NPT HEX NIPPLE, BRASS	1
14	74304601	3/4 STREET ELBOW, EXTRUDED	1
15	74305101	3/4 NPT X 4 LONG NIPPLE, BRASS	1
16	74502404	PRESSURE-SEALING WASHER 3/4" S/S	1
17	75001701	HOSE CLAMP #16 WORM GEAR S/S	1
18	79200101	VACUUM Y WHITE DELRIN	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B





TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: bbange

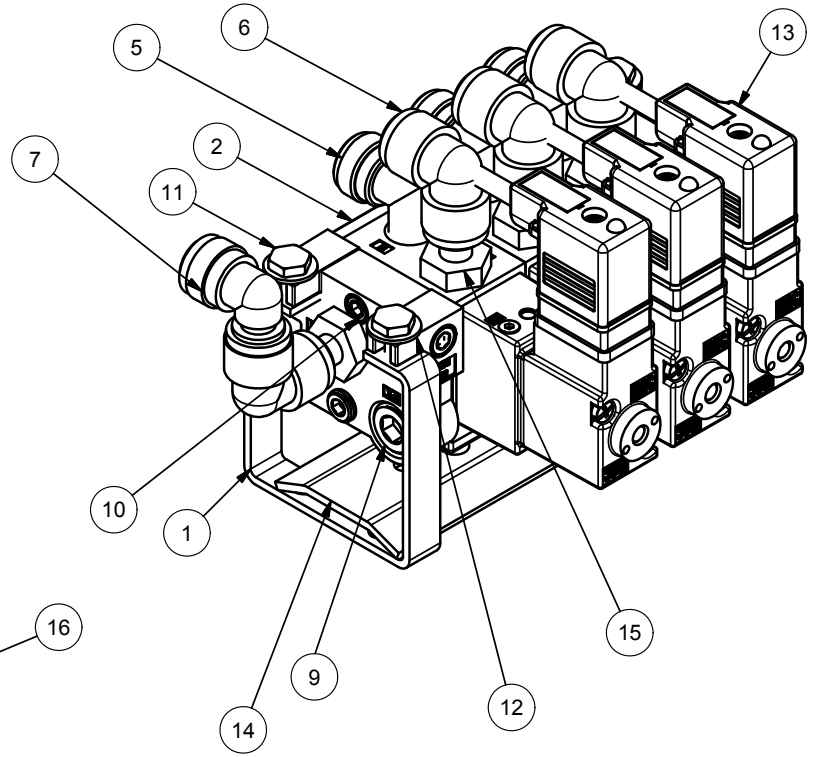
TITLE: VACUUM CONTROL PIPING OPTION FOR GAS FLUSH

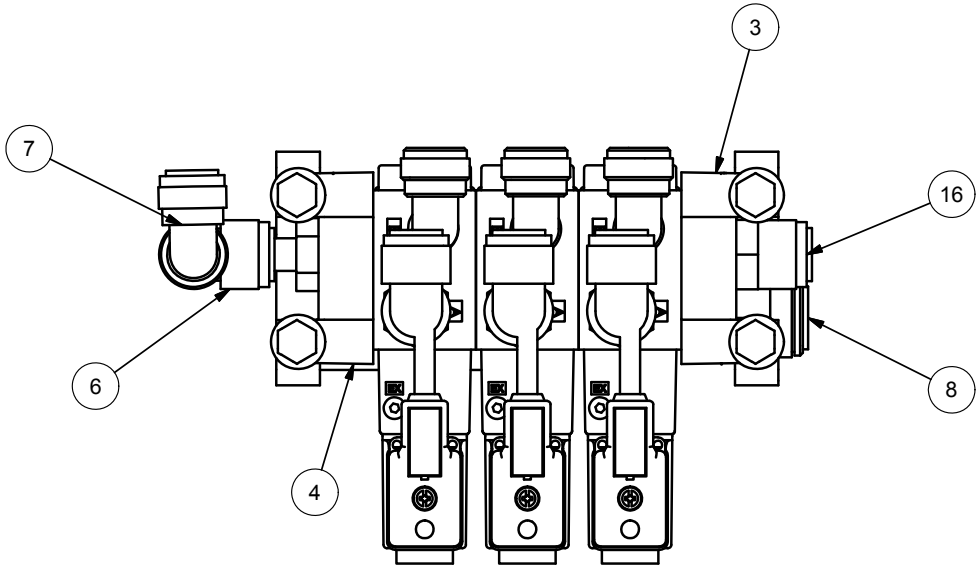
DWG NO.: MA101-0002 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	76204401A	STAND OFF MAC VALVE	2
2	73100201	24 vac stacking version with DIN connector	3
3	73101301 L	713 series stacking valves L	1
4	73101301 R	713 series stacking valves R	1
5	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	3
6	74203801	3/8 O.D. TUBE, UNION ELBOW	4
7	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
8	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
9	74301801	3/8 PLUG HEX COUNTERSUNK	1
10	74301601	1/8 plug, hex countersunk	6
11	75106601	1/4-28 UNF X 1/2 LG. HHCS	4
12	75103301	1/4 FLAT WASHER S/S	4
13	71607503	MAC VALVE 11mm CABLE 3M LONG	3
14	76204501A	Plate, Mac hold down plate for stand off	1
15	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	4
16	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	CORRECTED ALL NPT FITTINGS, ADDED MOUNT HARDWARE & ADDED 6X 74301601	11/14/24	RB





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

TITLE:

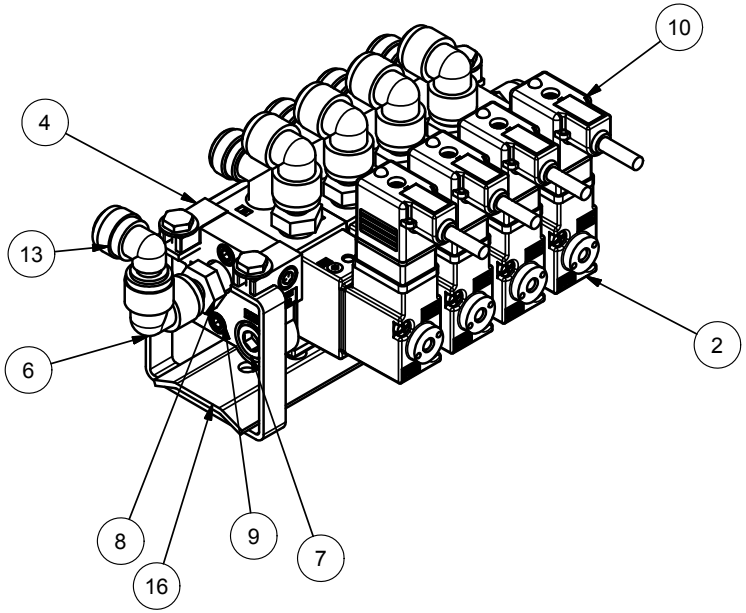
STANDARD MK3 MAC STACK ASSY.

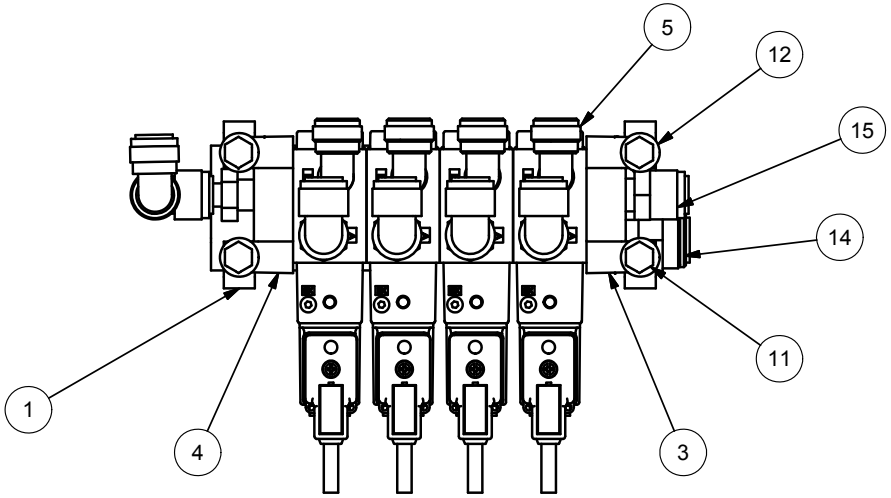
DWG NO: 63100101 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	76204401A	STAND OFF MAC VALVE	2
2	73100201	24 vac stacking version with DIN connector	4
3	73101301 L	713 series stacking valves L	1
4	73101301 R	713 series stacking valves R	1
5	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	4
6	74203801	3/8 O.D. TUBE, UNION ELBOW	5
7	74301801	3/8 PLUG HEX COUNTERSUNK	1
8	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	5
9	74301601	1/8 plug, hex countersunk	6
10	71607503	MAC VALVE 11mm CABLE 3M LONG	4
11	75106601	1/4-28 UNF X 1/2 LG. HHCS	4
12	75103301	1/4 FLAT WASHER S/S	4
13	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
14	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
15	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	1
16	76204501A	Plate, Mac hold down plate for stand off	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/16/2018	N.B
B	ADDED 71607503 X4	1/24/24	RB
C	CORRECTED ALL NPT FITTINGS, ADDED MOUNT HARDWARE & ADDED 6X 74301601	11/14/24	RB





CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

TITLE: STANDARD MK3 MAC STACK ASSY.

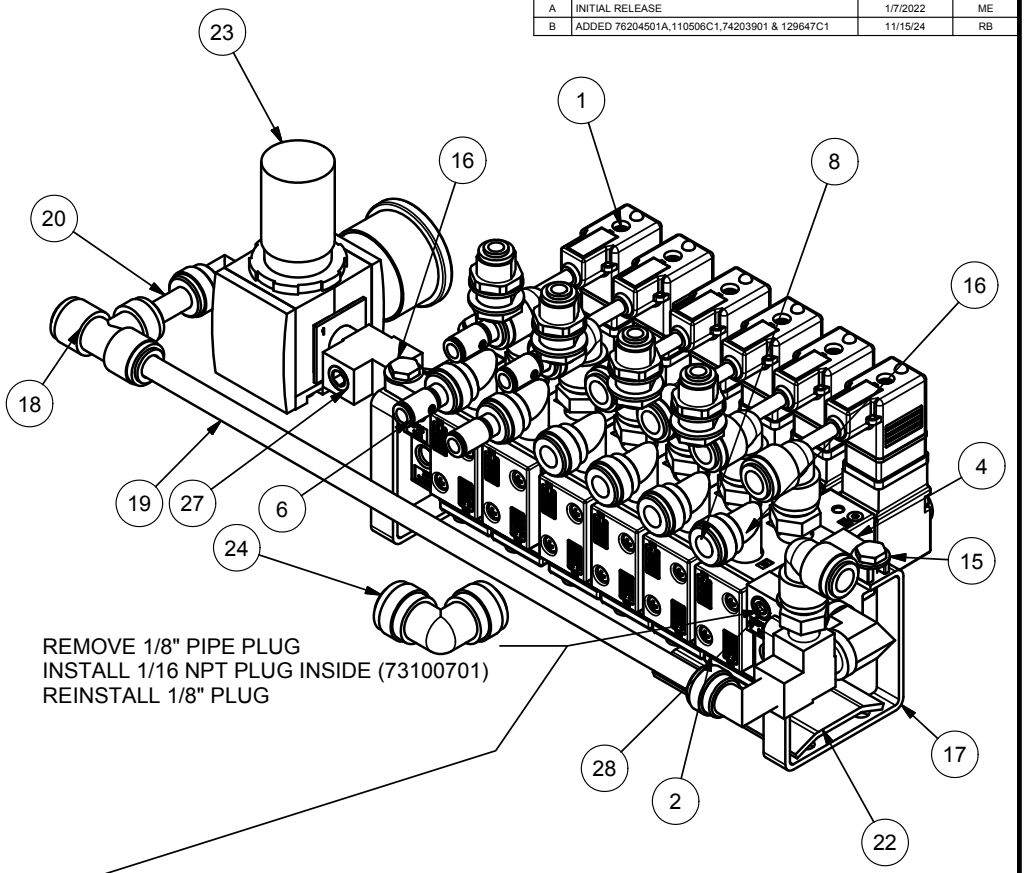
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO: 63100201 C

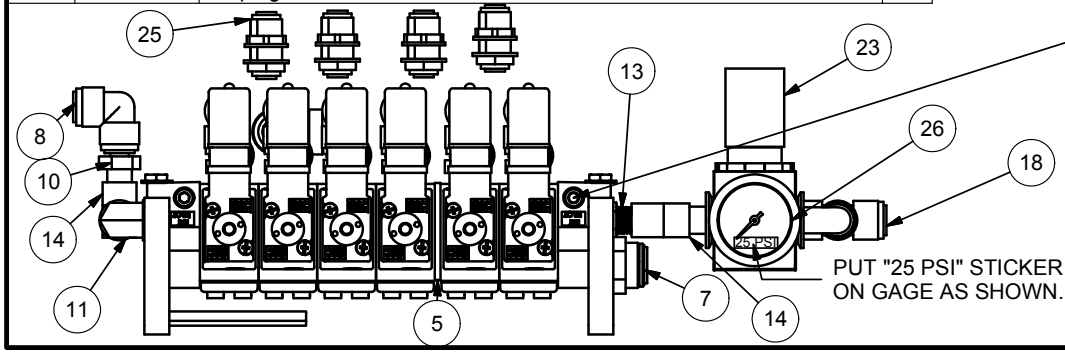
SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	71607503	MAC VALVE 11mm CABLE 3M LONG	6
2	73100201	24 vac stacking version with DIN connector	6
3	73100701	MAC VALVE 1/16 PIPE PLUG	2
4	73101301	713 series stacking valves	1
5	73104801	Isolator plate, Mac 713 series, inlet only	1
6	74103501	1/4 X 3/8 Reducer, plastic	4
7	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
8	74203801	3/8 O.D. TUBE, UNION ELBOW	7
9	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	8
10	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	13
11	74300601	1/4 NPT FEMALE ELBOW	1
12	74303101	1/4 CLOSE NIPPLE	1
13	74303701	1/4 NPT hex nipple - long	1
14	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS	2
15	75103301	1/4 FLAT WASHER S/S	4
16	75106601	1/4-28 UNF X 1/2 LG. HHCS	4
17	76204401A	STAND OFF MAC VALVE	2
18	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	1
19	126458C1	3/8" POLY HOSE, 11-1/2" LONG	1
20	126458C1	3/8" POLY HOSE, 2-1/8" LONG	1
21	74301801	3/8 PLUG HEX COUNTERSUNK	1
22	76204501A	Plate, Mac hold down plate for stand off	1
23	129647C1	AVENTICS 651 REGULATOR	1
24	74203901	1/2 O.D. TUBE UNION EBOW, PLASTIC	1
25	110506C1	1/4 BULKHEAD UNION PLASTIC	4
26	73501601	1-5/8" DIA. GAGE, 1/8 NPT, 0-60 PSI	1
27	74301701	1/4 plug, hex countersunk	1
28	74301601	1/8 plug, hex countersunk	6

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/7/2022	ME
B	ADDED 76204501A,110506C1,74203901 & 129647C1	11/15/24	RB



REMOVE 1/8" PIPE PLUG
INSTALL 1/16 NPT PLUG INSIDE (73100701)
REINSTALL 1/8" PLUG



PUT "25 PSI" STICKER
ON GAGE AS SHOWN.

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: M.E.

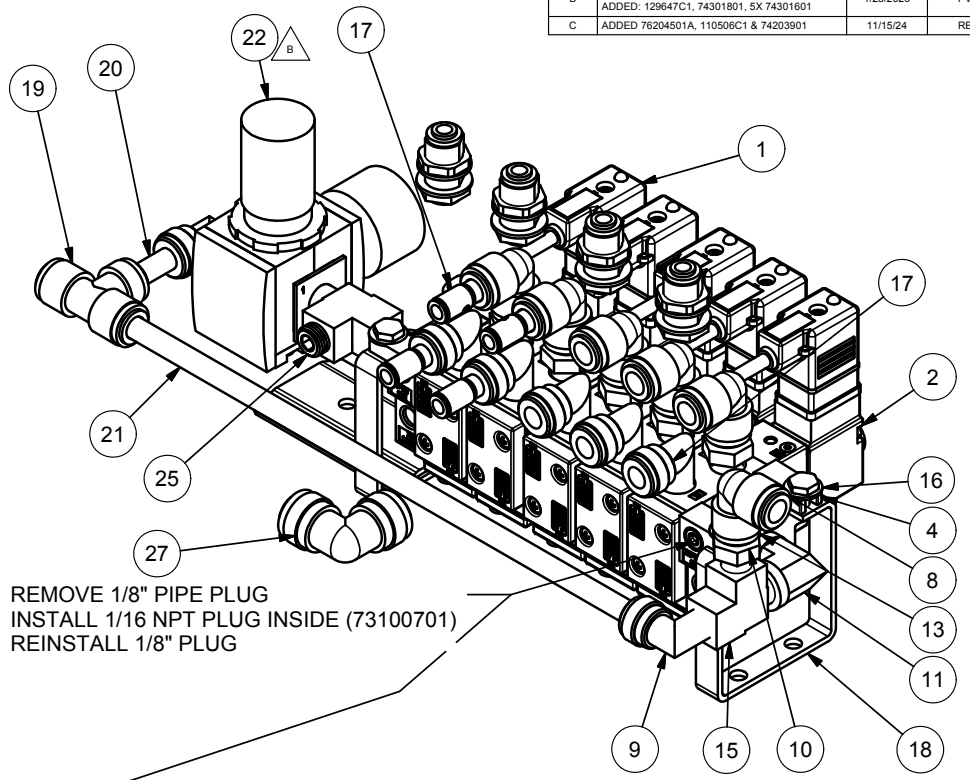
TITLE: MK3 BAG STRETCHER 6 MAC VALVE ASSEMBLY

DWG NO: 63101501 B

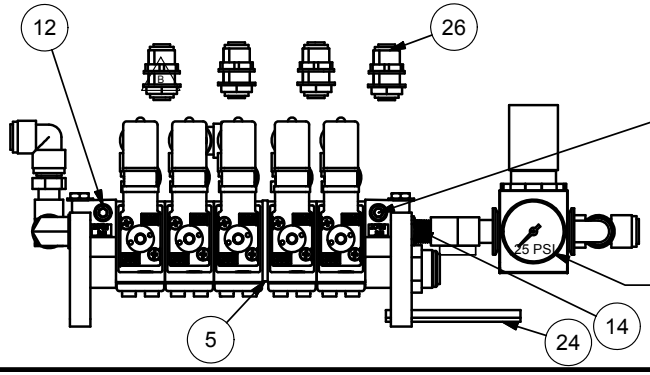
SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	71607503	MAC VALVE 11mm CABLE 3M LONG	5
2	73100201	24 vac stacking version with DIN connector	5
3	73100701	MAC VALVE 1/16 PIPE PLUG	2
4	73101301	713 series stacking valves	1
5	73104801	Isolator plate, Mac 713 series, inlet only	1
6	74103501	1/4 X 3/8 Reducer, plastic	4
7	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
8	74203801	3/8 O.D. TUBE, UNION ELBOW	6
9	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	7
10	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	6
11	74300601	1/4 NPT FEMALE ELBOW	1
12	74301601	1/8 plug, hex countersunk	6
13	74303101	1/4 CLOSE NIPPLE	1
14	74303701	1/4 NPT hex nipple - long	1
15	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS	2
16	75103301	1/4 FLAT WASHER S/S	4
17	75106601	1/4-28 UNF X 1/2 LG. HHCS	4
18	76204401A	STAND OFF MAC VALVE	2
19	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	1
20	126458C1	3/8 POLY HOSE, 10-5/16" LONG	1
21	126458C1	3/8{" POLY HOSE, 2-1/8" LONG	1
22	129647C1	AVENTICS 651 REGULATOR	1
23	74301801	3/8 PLUG HEX COUNTERSUNK	1
24	76204501A	Plate, Mac hold down plate for stand off	1
25	74301701	1/4 plug, hex countersunk	1
26	110506C1	1/4 BULKHEAD UNION PLASTIC	4
27	74203901	1/2 O.D. TUBE UNION EBOW, PLASTIC	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/7/2022	ME
B	DELETED: 73501201, 73501601, 74308601; ADDED: 129647C1, 74301801, 5X 74301601	1/25/2023	PV
C	ADDED 76204501A, 110506C1 & 74203901	11/15/24	RB



B REMOVE 1/8" PIPE PLUG
INSTALL 1/16 NPT PLUG INSIDE (73100701)
REINSTALL 1/8" PLUG



PUT "25 PSI" STICKER
ON GAGE AS SHOWN.

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TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

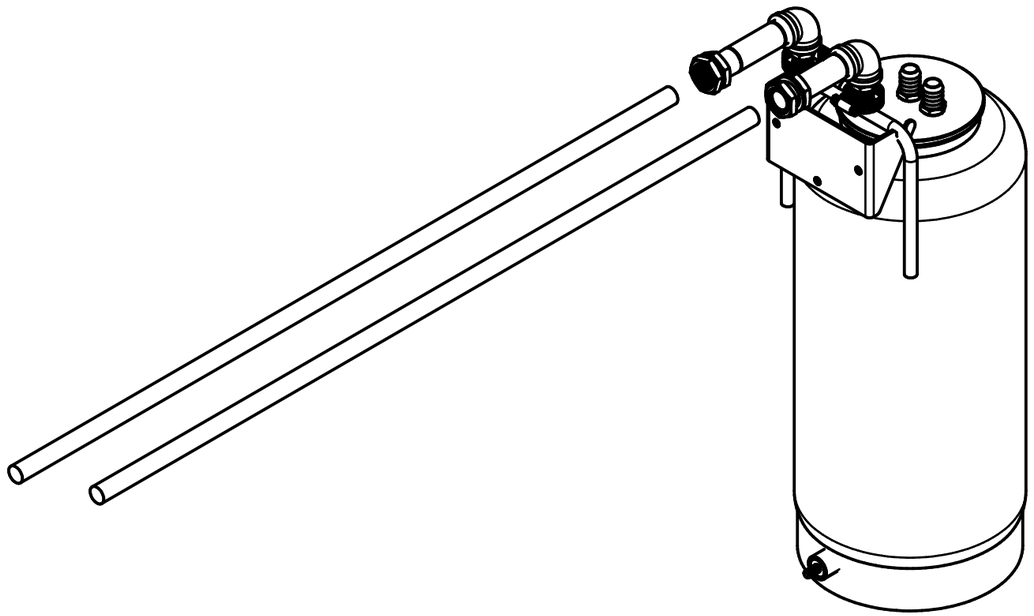
APPROVED MFG: APPROVED ENG:
DRAWN BY: M.E.

TITLE: MK3 BAG STRETCHER 5 MAC VALVE ASSEMBLY

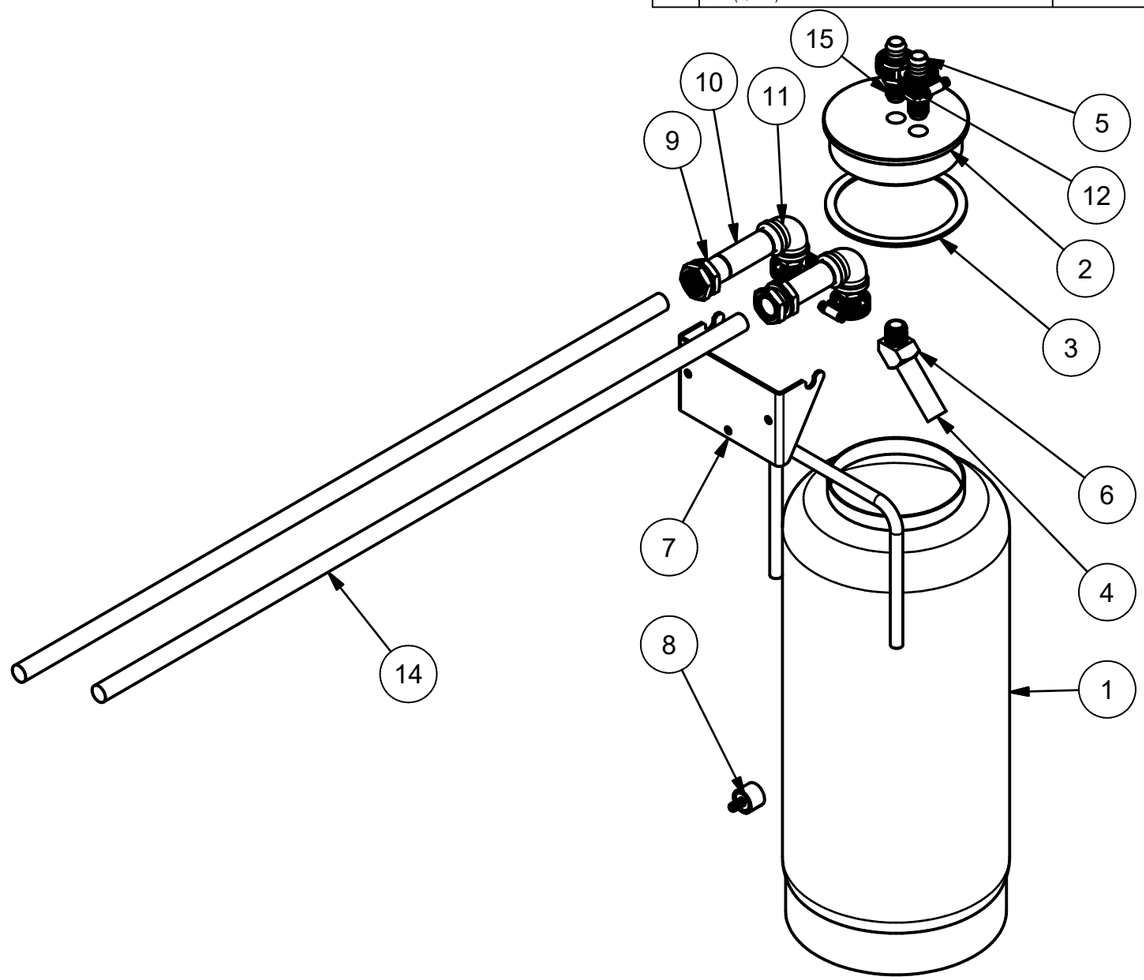
DWG NO: 63102001 C

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72200101	CANISTER FILTER TANK, S/S 9" ID	1
2	72200501A	LID, CANISTER TANK 1/2 NPT	1
3	72200601	GASKET, CANISTER LID	1
4	72200801	DRAIN TUBE, 1/2 PIPE CANISTER FILTER	1
5	74103101	3/4 X 1/2 male hose barb	4
6	74307201	1/2 STREET ELBOW, 45 DEG.	1
7	76203901A	Canister filter hanger	1
8	79501601	CANISTER TANK BUMPER WITH 5/16-18 THREADS	1
9	74303001	3/4 LOCKNUT BRASS EXTRUDED	4
10	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
11	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	2
12	75001701	HOSE CLAMP #16 WORM GEAR S/S	4
13	71601101	3/4 SEAL RING	2
14	73301401	POLYWIRE TUBING 3/4 X 3FT	2
15	74103201	3/4 X 3/4 MALE HOSE BARB	2



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/3/2018	MTEKCOR P\\ciloNta
B	ADD 2-3X4X3FT POLYWIRE TUBING AND 6 MALE HOSE BAR (QTY 6)	11/19/2024	VK



TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

M-TEK INC.

APPROVED MFG: APPROVED ENG:

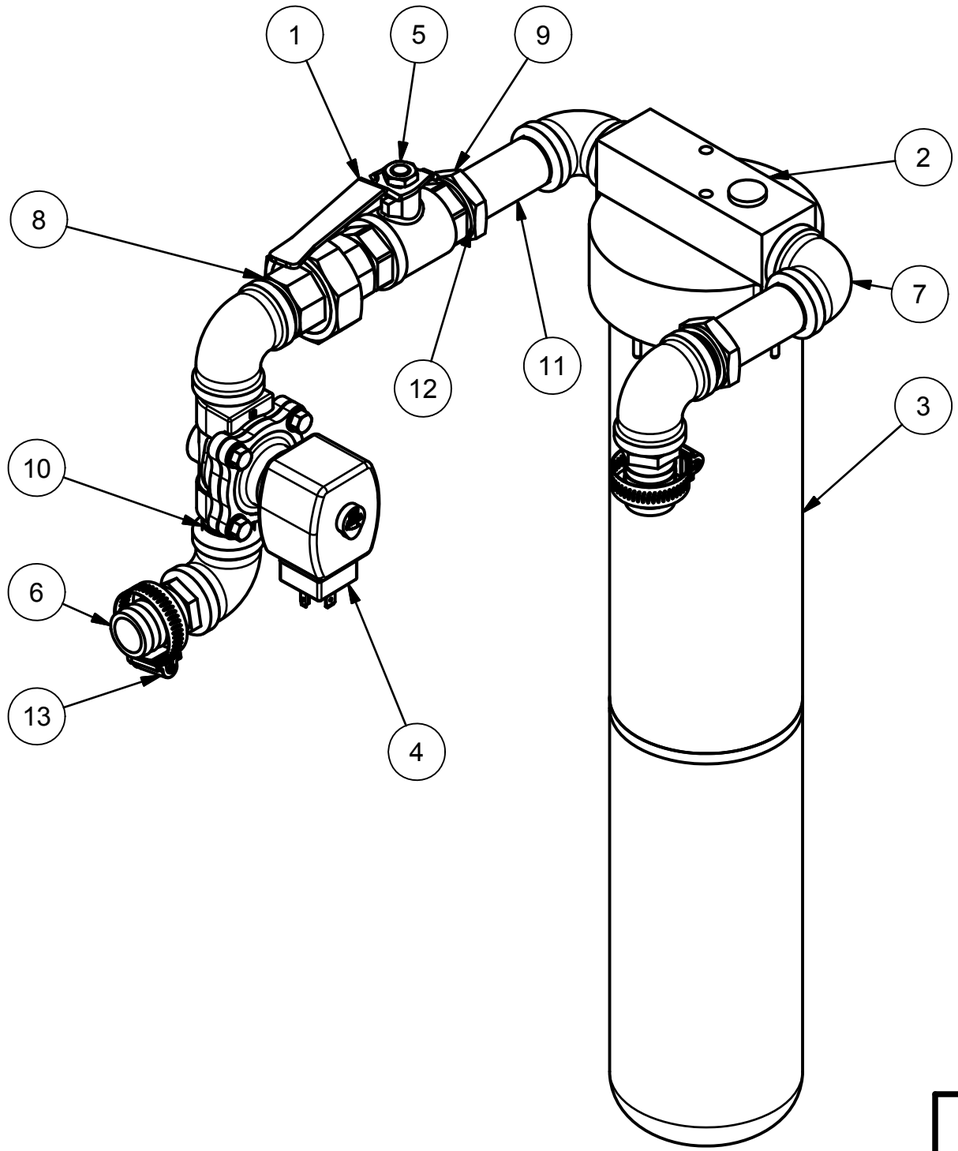
DRAWN BY: TomJr

TITLE: CANISTER, WITHOUT ELEMENT

DWG NO.: MA185-0003 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	125097C1	3/4 BALL VALVE HANDLE	1
2	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
3	72201901	USE 62200201 - CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
4	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
5	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
6	74103301	1 X 3/4 NPT MALE HOSE BARB	2
7	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
8	74301501	3/4 UNION, CAST	1
9	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
10	74303401	3/4 CLOSE NIPPLE	6
11	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
12	74502404	PRESSURE-SEALING WASHER 3/4" S/S	2
13	75001701	HOSE CLAMP #16 WORM GEAR S/S	2



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B

* Not shown 72200401 paper filter element

M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: bbange

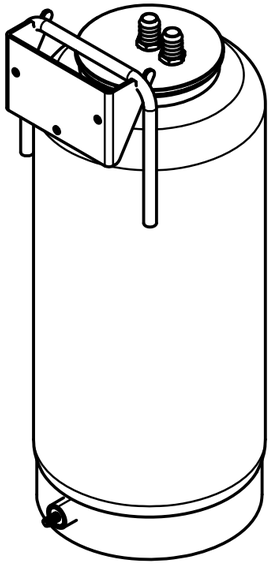
TITLE: MK III LONG CUNO ASSEMBLY

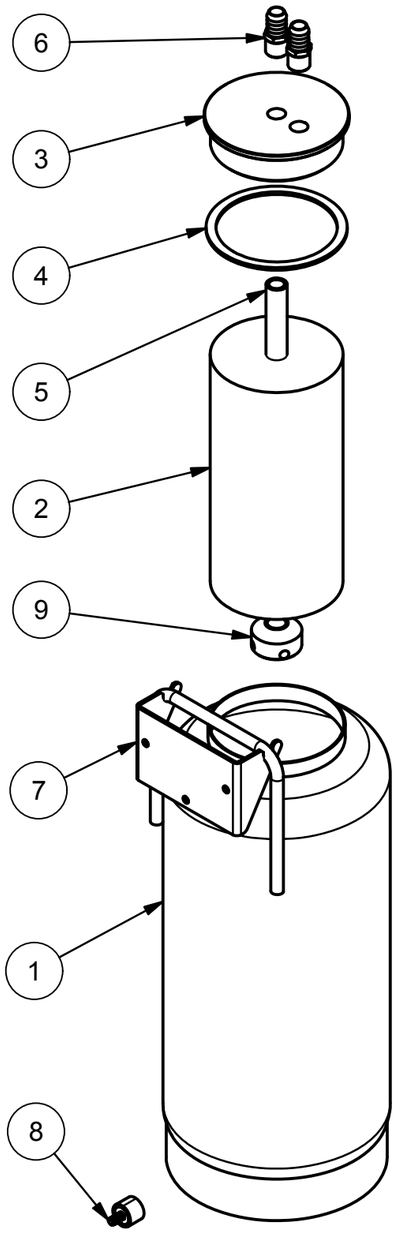
DWG NO.: MA185-0004 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72200101	CANISTER FILTER TANK, S/S 9" ID	1
2	72200201	FILTER, PAPER FOR CANISTER TANK	1
3	72200501A	LID, CANISTER TANK 1/2 NPT	1
4	72200601	GASKET, CANISTER LID	1
5	72200701	MOUNT TUBE, 1/2 PIPE CANISTER FILTER	1
6	74103101	3/4 X 1/2 male hose barb	2
7	76203901A	Canister filter hanger	1
8	79501601	CANISTER TANK BUMPER WITH 5/16-18 THREADS	1
9	72200901	KNOB, CANISTER FILTER 1/2 NPT MOUNTING TUBE	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	8/3/2018	CI
B	N/A	11/2/2022	PV
C	REORDERED BOM	11/15/24	RB





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FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

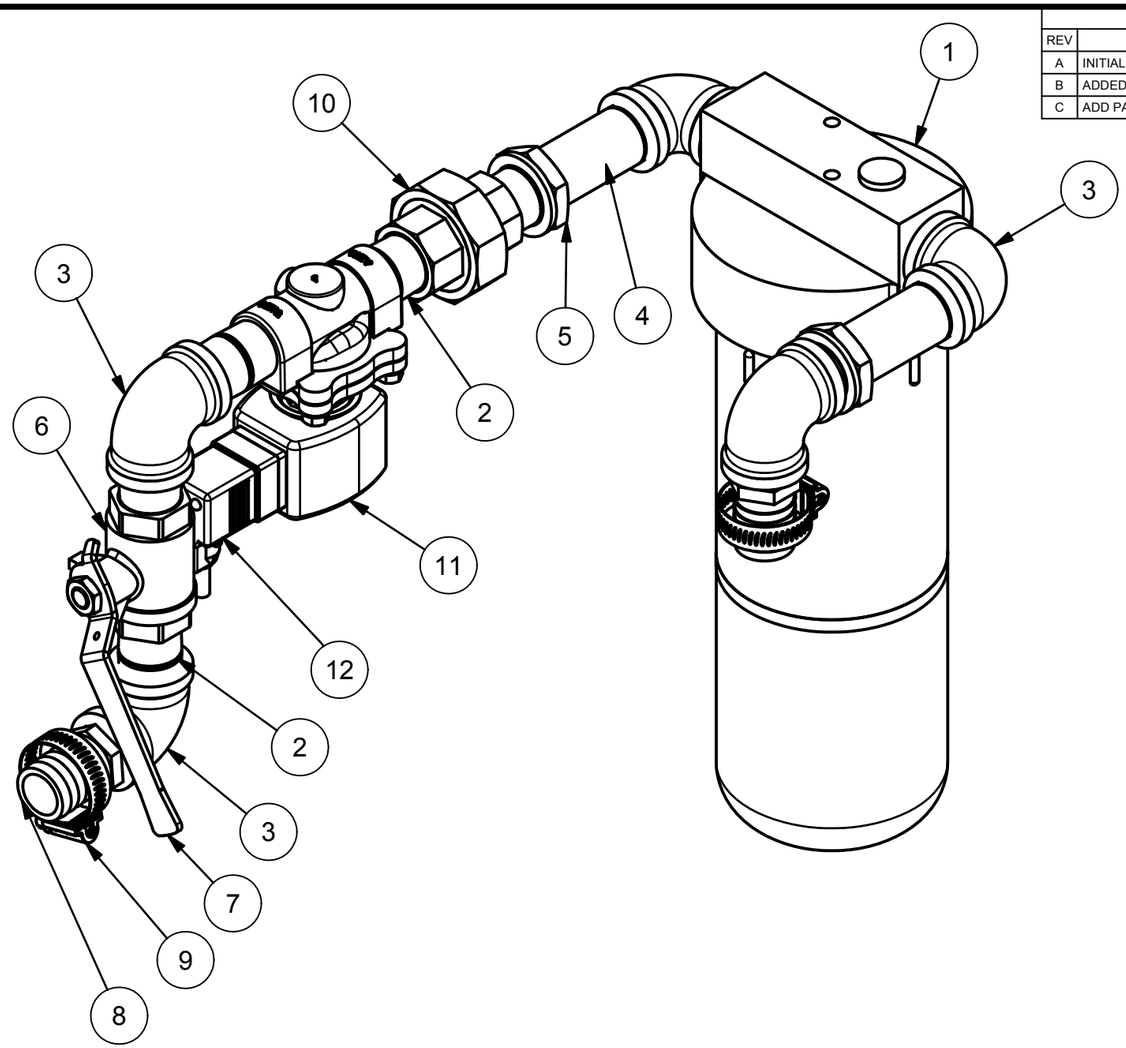
TITLE:

CANISTER, WITH ELEMENT

DWG NO.: MA185-0002 C

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
2	74303401	3/4 CLOSE NIPPLE	6
3	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
4	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
5	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
6	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
7	125097C1	3/4 BALL VALVE HANDLE	1
8	74103301	1 X 3/4 NPT MALE HOSE BARB	2
9	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
10	74301501	3/4 UNION, CAST	1
11	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
12	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
13	71601101	3/4 SEAL RING	2
14	72202101	Wrench; for Cuno Sump	1
15	62200301	CUNO SUMP ONLY, 1M2 FILTER UNIT, 13.5/343MM, TRANSPARENT	1



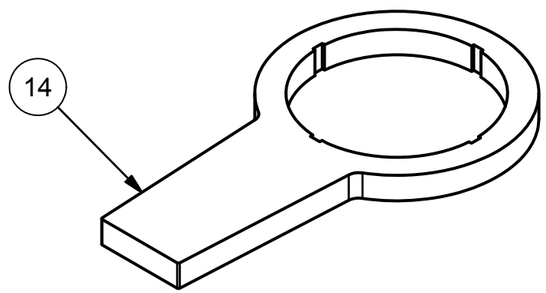
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	ADD PARTS 71601101 AND 62200201	11/11/2024	VK

△B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: KUNO PAPER FILTER (PART #72200401)



CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: bbange

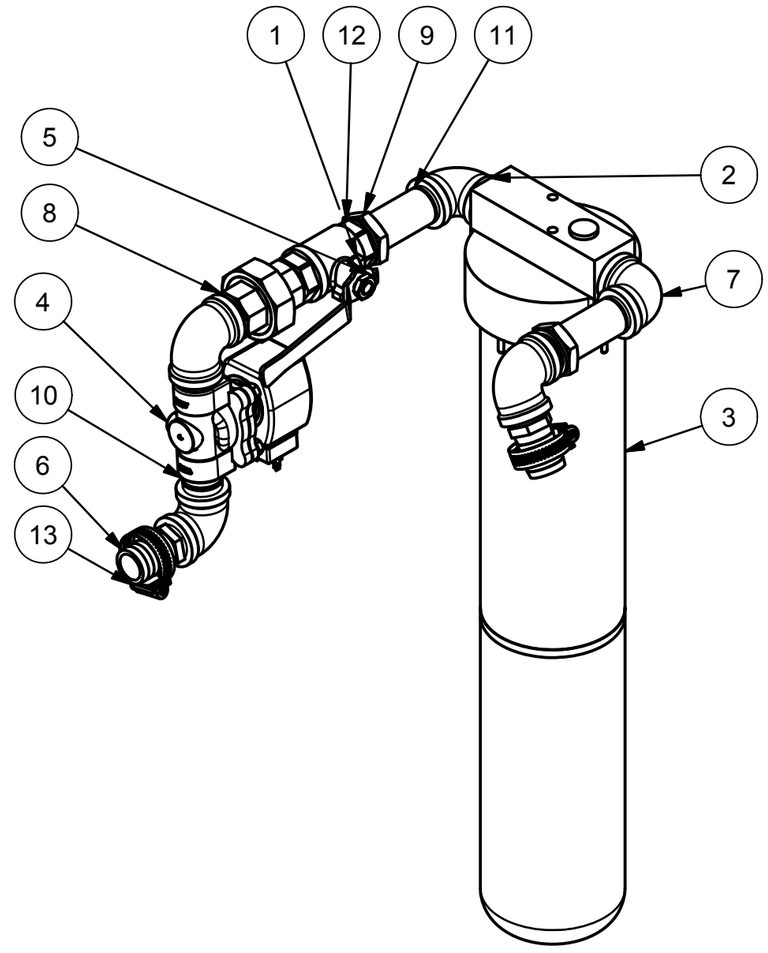
TITLE: MK III SHORT CUNO ASSEMBLY

DWG NO.: MA185-0005 C

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	125097C1	3/4 BALL VALVE HANDLE	1
2	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
3	72201901	USE 62200201 - CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
4	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
5	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
6	74103301	1 X 3/4 NPT MALE HOSE BARB	2
7	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
8	74301501	3/4 UNION, CAST	1
9	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
10	74303401	3/4 CLOSE NIPPLE	6
11	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
12	74502404	PRESSURE-SEALING WASHER 3/4" S/S	2
13	75001701	HOSE CLAMP #16 WORM GEAR S/S	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/22/2019	TWL



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: MDS APPROVED ENG: MDS

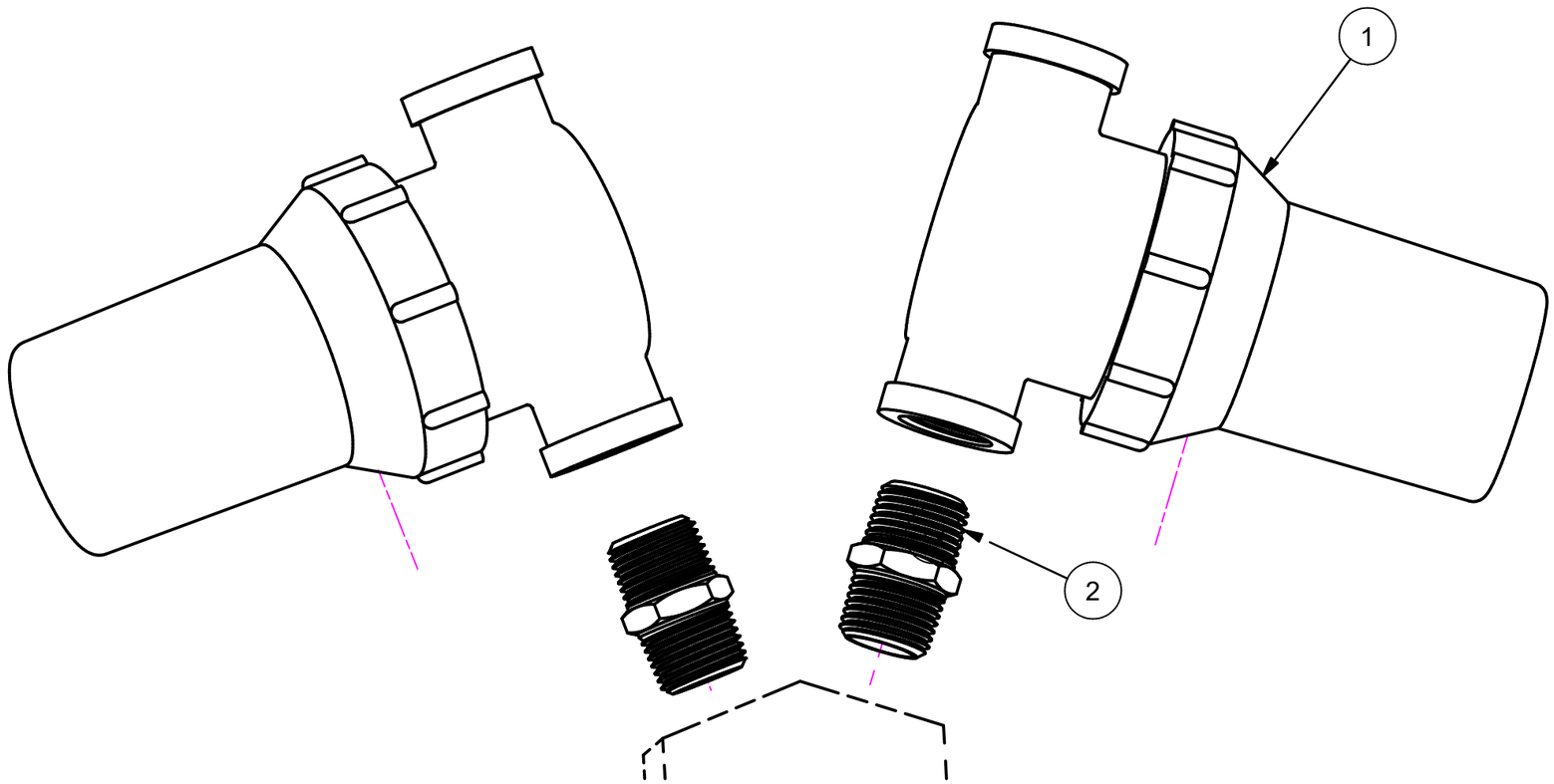
DRAWN BY: TomJr

TITLE: MAP VAC LONG CUNO ASSEMBLY WITH VALVE

DWG NO.: MA185-0008 A

SCALE: N/A DATE: 10/14/2021 SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B



REPLACEMENT MESH FILTER 72202601

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72202401	PARTICLE, PER PROBE FILTER	2
2	74304001	1/2 HEX NIPPLE	2

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: RB

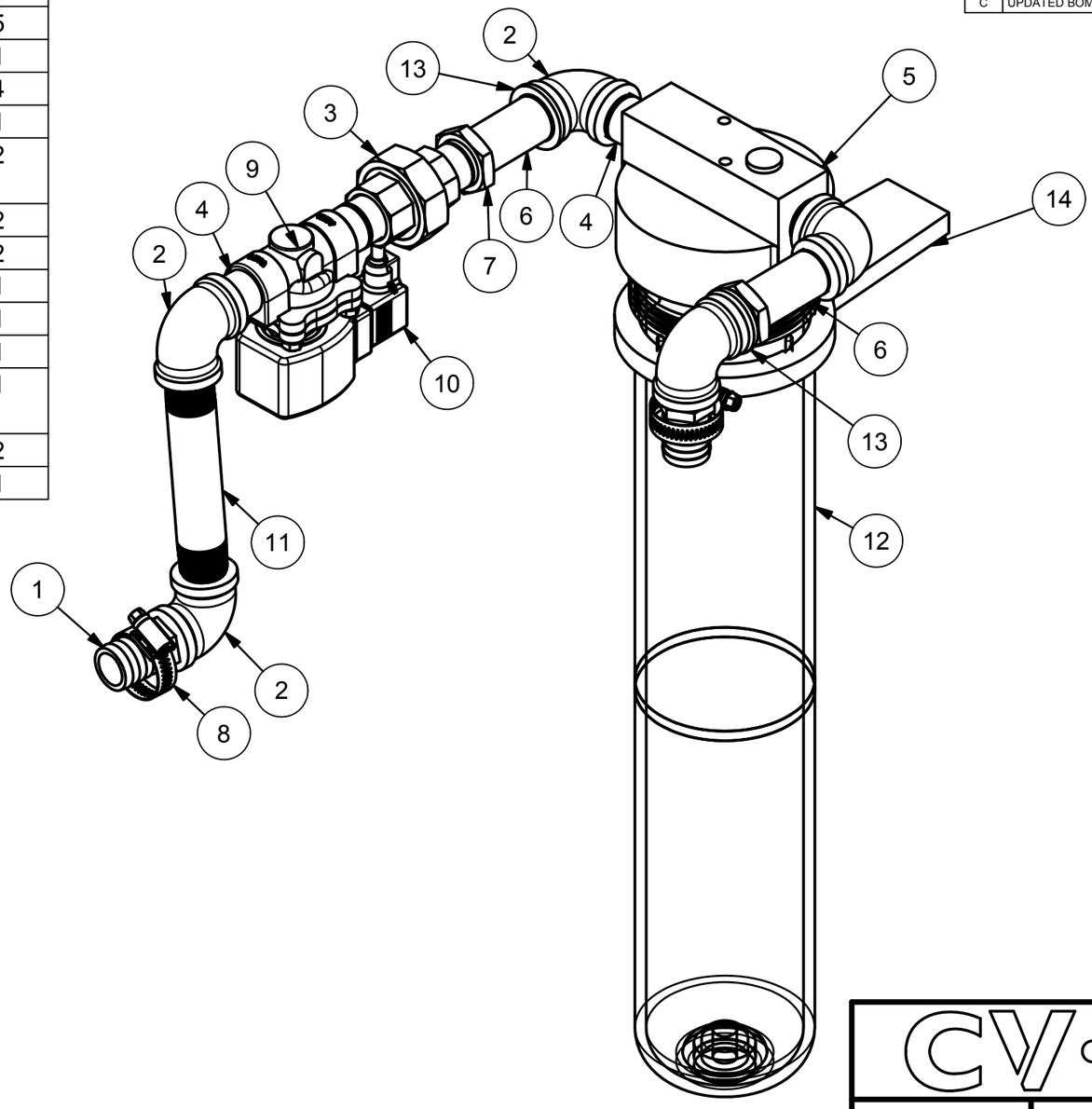
TITLE: PARTICLE (PER PROBE ASSEMBLY)

DWG NO.: MA185-0009 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74103301	1 X 3/4 NPT MALE HOSE BARB	2
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
3	74301501	3/4 UNION, CAST	1
4	74303401	3/4 CLOSE NIPPLE	4
5	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
6	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
7	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
8	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
9	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
10	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
11	74305201	3/4 X 5 long nipple	1
12	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
13	71601101	3/4 SEAL RING	2
14	72202101	Wrench; for Cuno Sump	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	UPDATED BOM TO MATCH INFOR	12/19/2024	GW



B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: KUNO PAPER FILTER (PART #72200401)

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

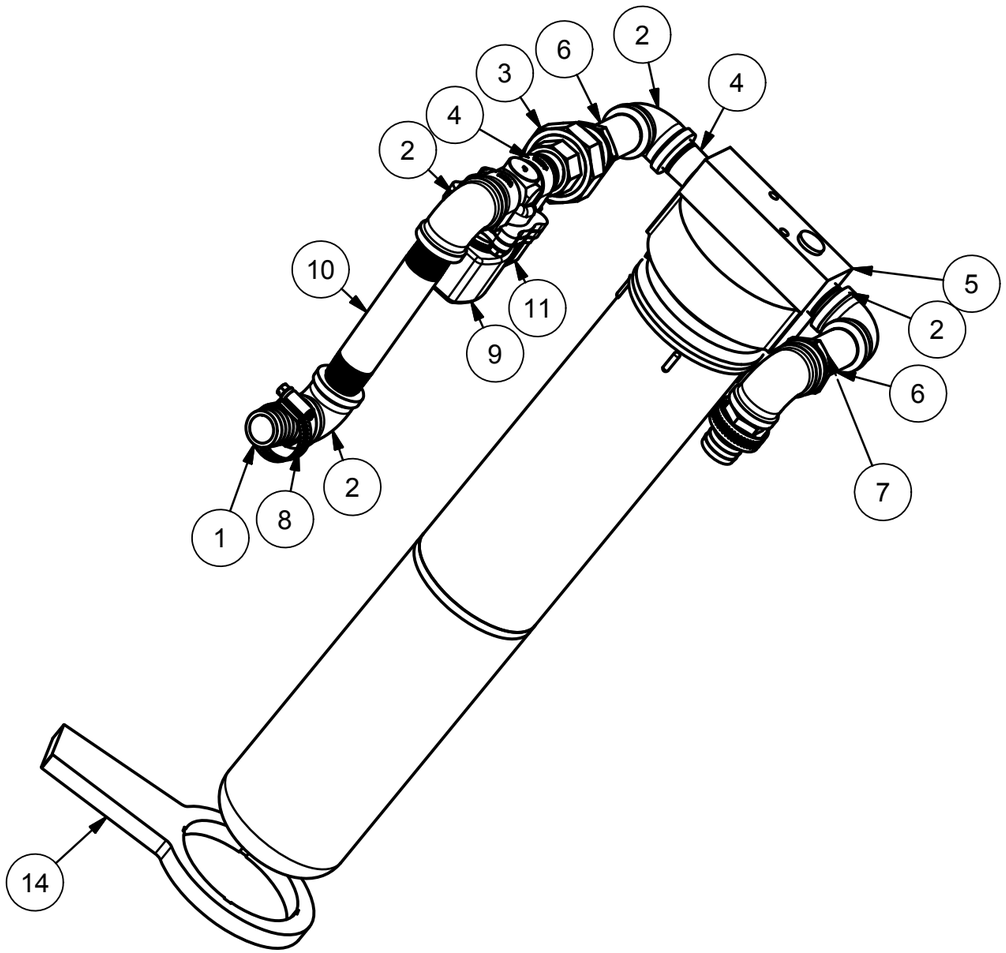
TITLE: MK 3 SHORT CUNO ASSEMBLY W/O VALVE

DWG NO.: MA185-0011 C

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74103301	1 X 3/4 NPT MALE HOSE BARB	2
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
3	74301501	3/4 UNION, CAST	1
4	74303401	3/4 CLOSE NIPPLE	4
5	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
6	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
7	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
8	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
9	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
10	74305201	3/4 X 5 long nipple	1
11	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
12	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
13	71601101	3/4 SEAL RING	2
14	72202101	Wrench; for Cuno Sump	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	REPLACED WASHER 74502404 WITH 71601101	11/8/2024	VK



B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

TITLE: MK 3 LONG CUNO ASSEMBLY W/O VALVE

DWG NO.: MA185-0012 C

SCALE: N/A | DATE: 2/1/2023 | SHEET 1 OF 1

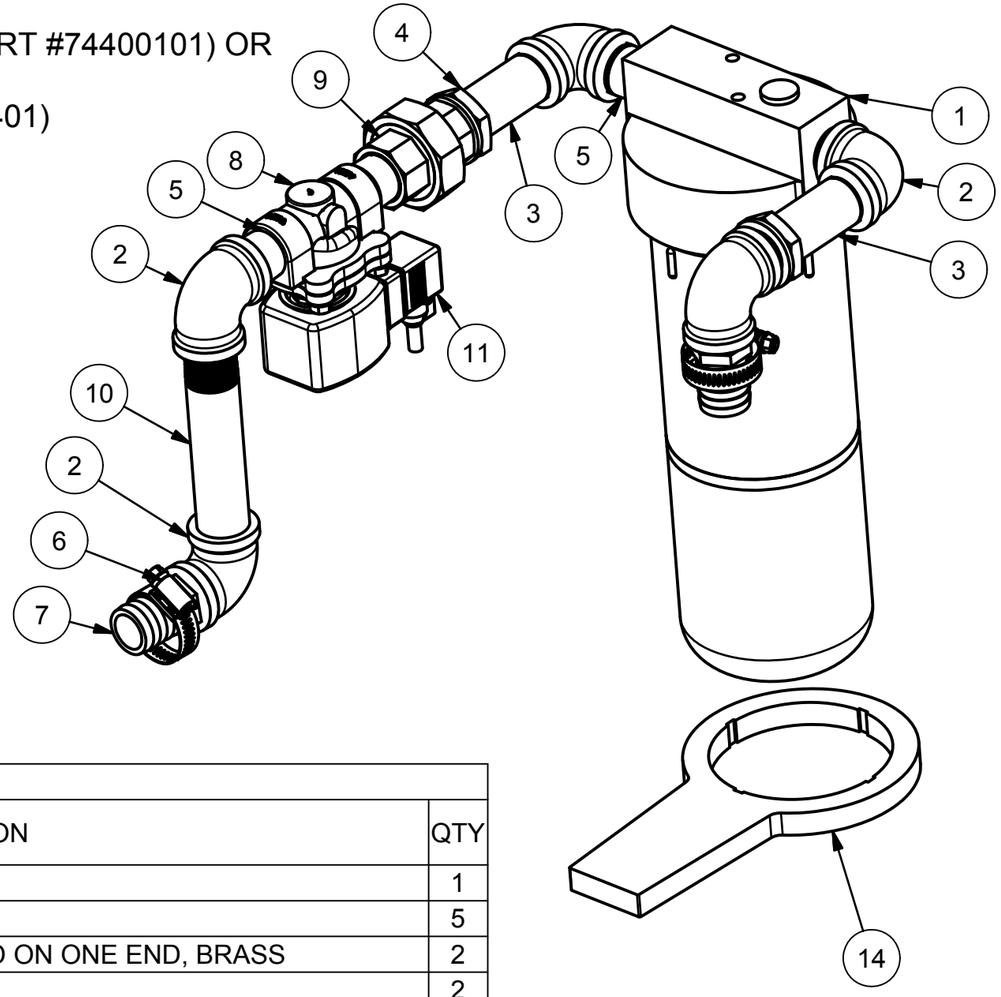
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	ADDED PARTS 71601101 AND 62200201	11/12/2024	VK

B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: KUNO PAPER FILTER (PART #72200401)



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
3	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
4	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
5	74303401	3/4 CLOSE NIPPLE	4
6	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
7	74103301	1 X 3/4 NPT MALE HOSE BARB	2
8	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
9	74301501	3/4 UNION, CAST	1
10	74305201	3/4 X 5 long nipple	1
11	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
13	71601101	3/4 SEAL RING	2
14	72202101	Wrench; for Cuno Sump	1
17	62200301	CUNO SUMP ONLY, 1M2 FILTER UNIT, 13.5/343MM, TRANSPARENT	1

USE WITH PIAB

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

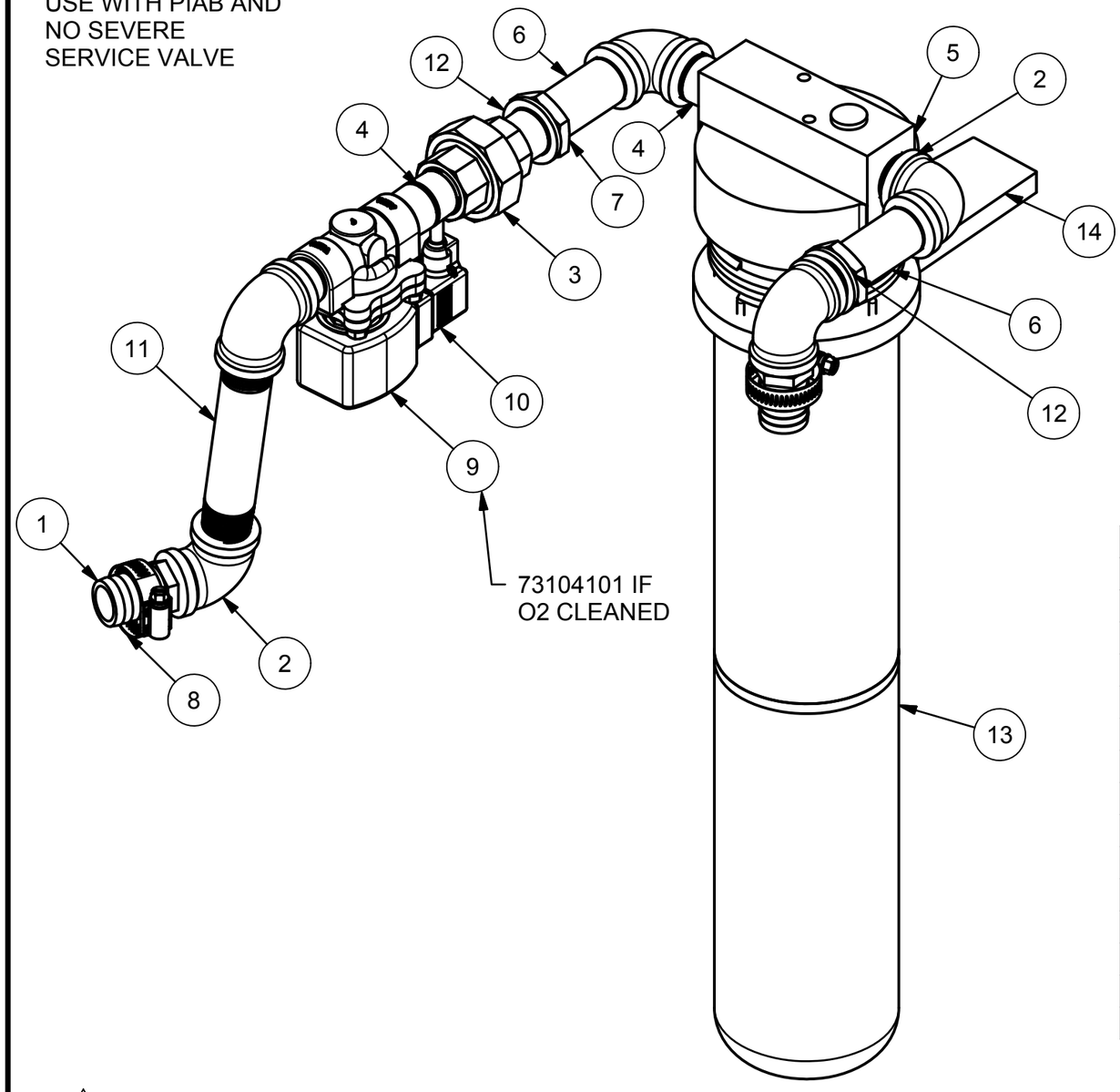
DRAWN BY: rowdy

TITLE: MK 3 SHORT CUNO ASSEMBLY W/O VALVE N/C

DWG NO.: MA185-0013 C

SCALE: N/A | DATE: 1/31/2023 | SHEET 1 OF 1

USE WITH PIAB AND
NO SEVERE
SERVICE VALVE



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	ADDED WASHER 71601101 AND FILTER UNIT 62200201	11/11/2024	VK

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74103301	1 X 3/4 NPT MALE HOSE BARB	2
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	5
3	74301501	3/4 UNION, CAST	1
4	74303401	3/4 CLOSE NIPPLE	4
5	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
6	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
7	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
8	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
9	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
10	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
11	74305201	3/4 X 5 long nipple	1
12	71601101	3/4 SEAL RING	2
13	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
14	72202101	Wrench; for Cuno Sump	1

△B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

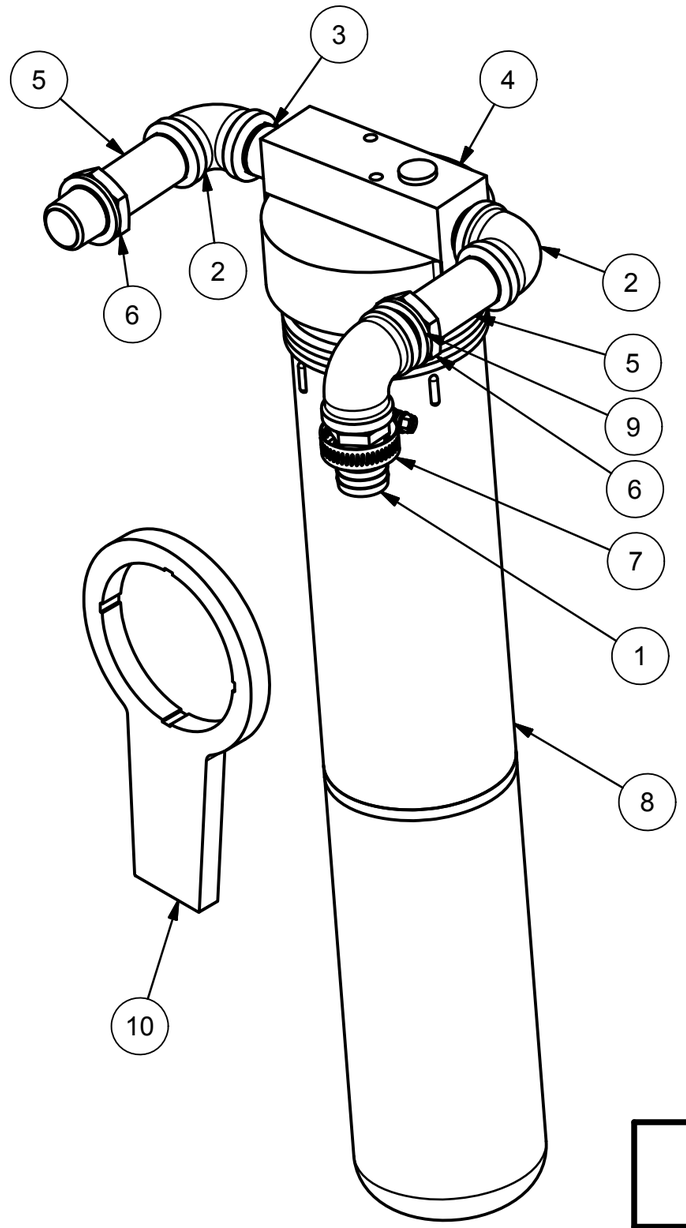
TITLE: MK 3 LONG CUNO ASSEMBLY W/O VALVE N/C

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA185-0014 C

SCALE: N/A DATE: 1/31/2023 SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74103301	1 X 3/4 NPT MALE HOSE BARB	1
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
3	74303401	3/4 CLOSE NIPPLE	2
4	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
5	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
6	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
7	75001701	HOSE CLAMP #16 WORM GEAR S/S	1
8	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
9	71601101	3/4 SEAL RING	2
10	72202101	Wrench; for Cuno Sump	1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV
C	NEW WASHER 71601101	11/11/2024	VK

USE WITH PIAB THAT HAS SEVERE SERVICE VALVE

△B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

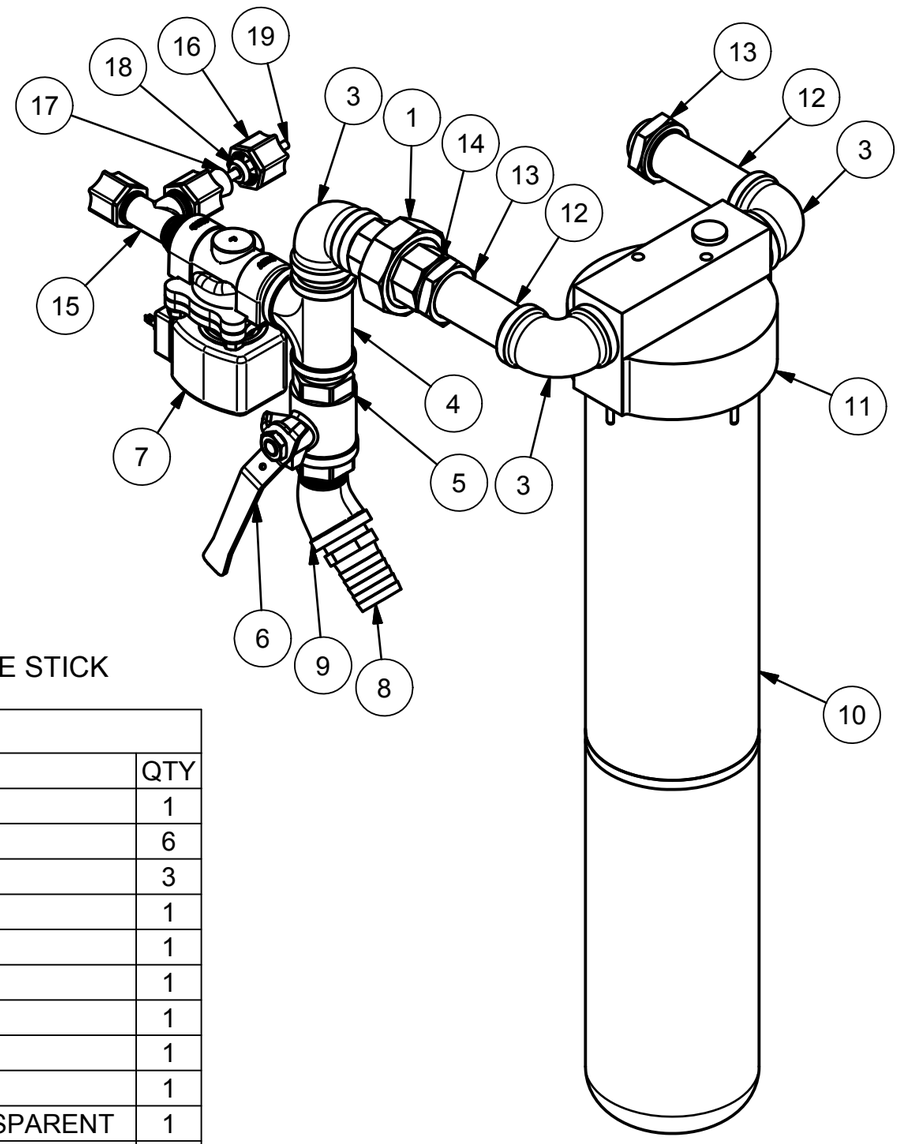
DRAWN BY: rowdy

TITLE: MK 3 LONG CUNO ASSEMBLY NO VALVES

DWG NO.: MA185-0015 C

SCALE: N/A | DATE: 2/1/2023 | SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED NOTE	4/12/2024	PV



B

NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74301501	3/4 UNION, CAST	1
2	74303401	3/4 CLOSE NIPPLE	6
3	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
4	74300901	3/4 NPT FEM TEE FORGED	1
5	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
6	125097C1	3/4 BALL VALVE HANDLE	1
7	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
8	74103301	1 X 3/4 NPT MALE HOSE BARB	1
9	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1
10	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
11	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
12	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
13	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
14	74502404	PRESSURE-SEALING WASHER 3/4" S/S	2
15	74205501	1/2 X 1/2 JACO MALE RUN TEE	1
16	74205401	1/2 JACO NUT WITH STAINLESS STEEL GRIPPER	1
17	71607001	GROMMET	1
18	71607101	GRIP RING	1
19	71018901A	TEMP SENSOR	1

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

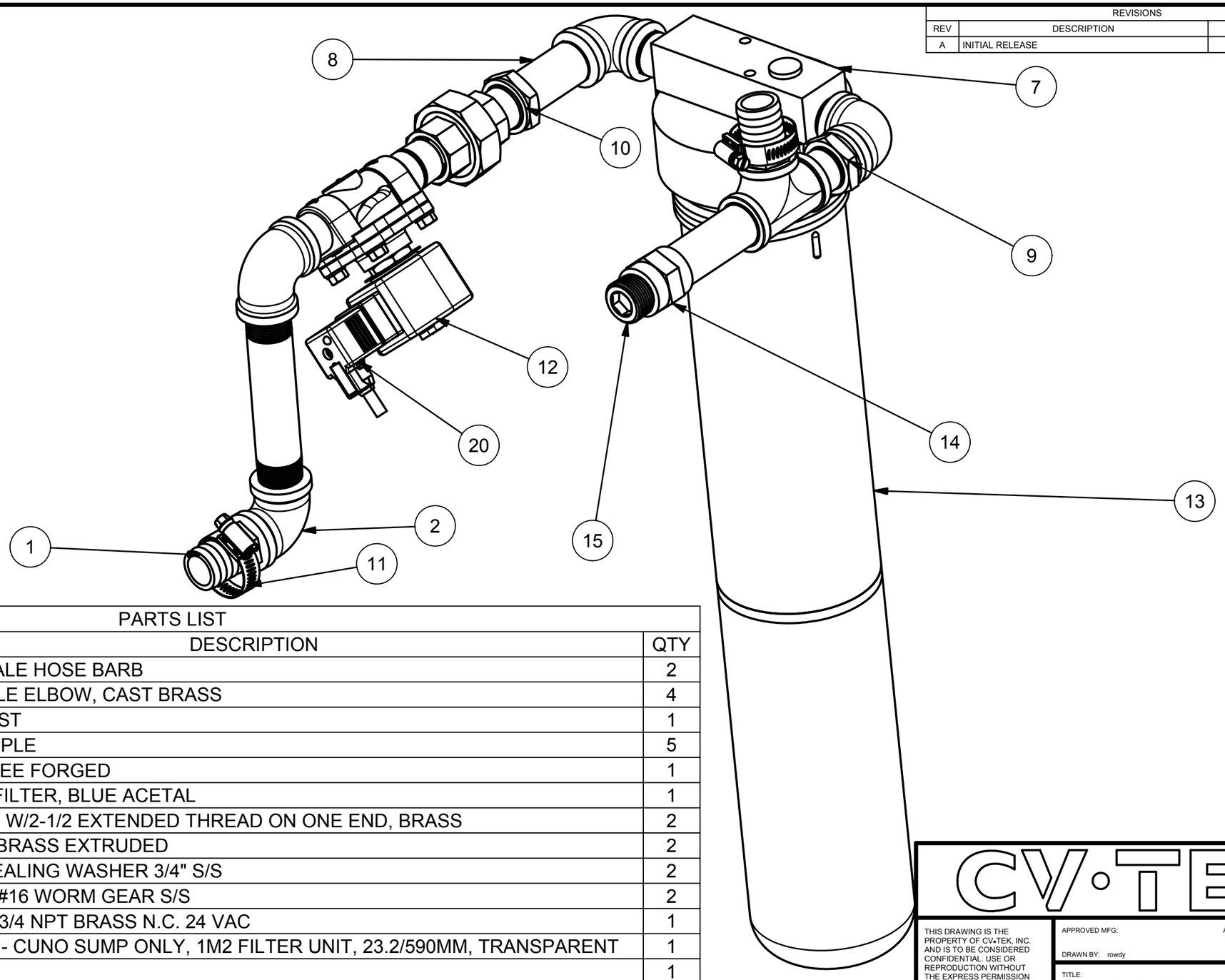
DRAWN BY: rowdy

TITLE: LARGE CUNO FOR PIAB

DWG NO.: MA185-0016 B

SCALE: N/A DATE: 2/1/2023 SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74103301	1 X 3/4 NPT MALE HOSE BARB	2
2	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	4
3	74301501	3/4 UNION, CAST	1
4	74303401	3/4 CLOSE NIPPLE	5
5	74300901	3/4 NPT FEM TEE FORGED	1
7	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
8	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
9	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
10	74502404	PRESSURE-SEALING WASHER 3/4" S/S	2
11	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
12	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
13	72201901	USE 62200201 - CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
14	74307401	3/4 COUPLING	1
15	74302001	3/4 PLUG, HEX COUNTERSUNK	1
19	74305201	3/4 X 5 long nipple	1
20	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

TITLE: MK 3 LONG CUNO FOR HOUSE VACUUM

DWG NO.: MA185-0018 A

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B

PARTS LIST

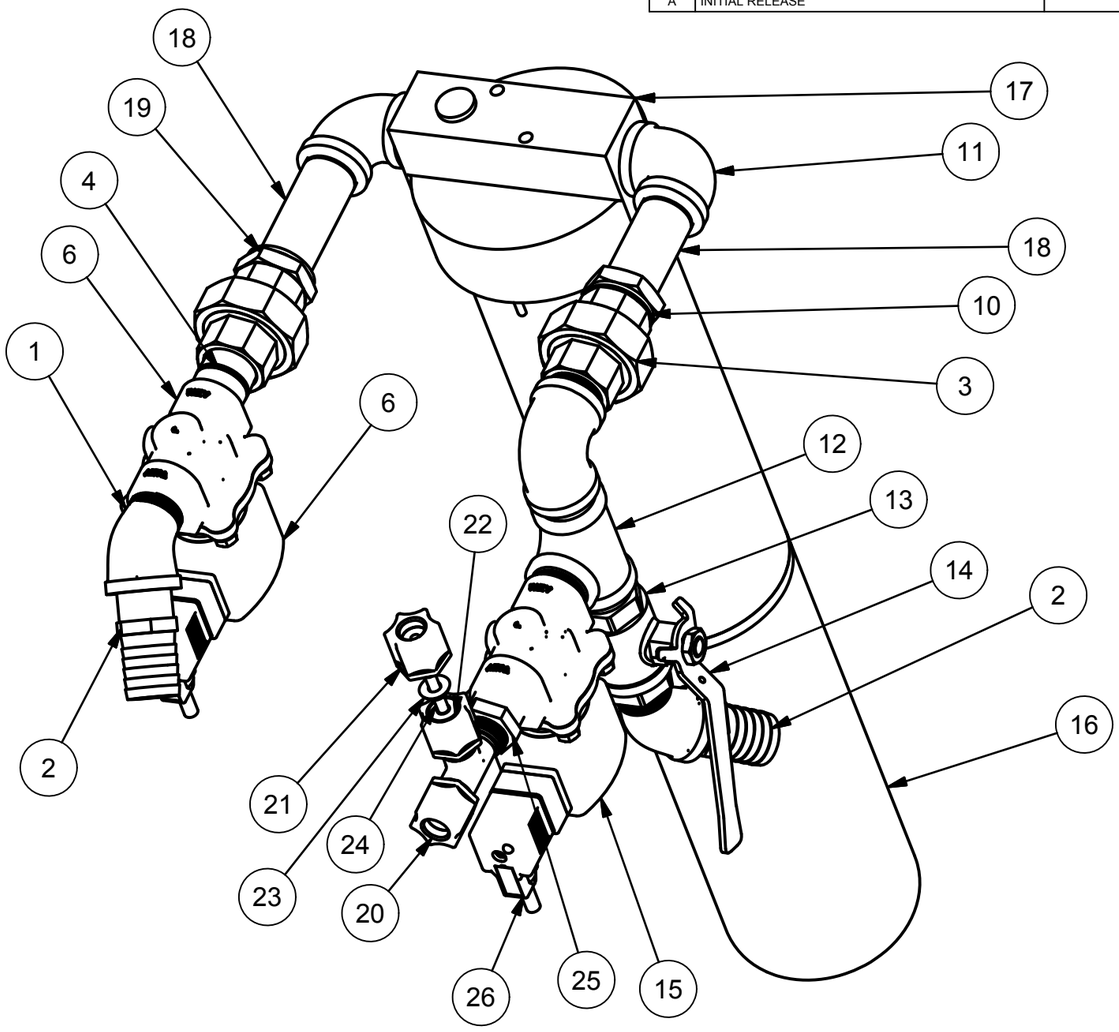
ITEM	PART NO.	DESCRIPTION	QTY
1	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	2
2	74103301	1 X 3/4 NPT MALE HOSE BARB	2
3	74301501	3/4 UNION, CAST	2
4	74303401	3/4 CLOSE NIPPLE	7
5	74300401	1/2 NPT X 1 1/2 BULK HEAD COUPLING	1
6	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
7	74203901	1/2 O.D. TUBE UNION EBOW, PLASTIC	1
8	74204901	1/2 O.D. TUBE x 1/2 NPT STEM ADAPTER, PLASTIC	1
9	110556C1	1/2 NPT AMLE X 1/2 STEM ADAPTER SWIVEL	1
10	74502404	PRESSURE-SEALING WASHER 3/4" S/S	3
11	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
12	74300901	3/4 NPT FEM TEE FORGED	1
13	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
14	125097C1	3/4 BALL VALVE HANDLE	1
15	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
16	62200201	CUNO SUMP ONLY, 1M2 FILTER UNIT, 23.2/590MM, TRANSPARENT	1
17	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
18	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
19	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
20	74205501	1/2 X 1/2 JACO MALE RUN TEE	1
21	74205401	1/2 JACO NUT WITH STAINLESS STEEL GRIPPER	1
22	71607001	GROMMET	1
23	71607101	GRIP RING	1
24	71018901A	TEMP SENSOR	1
25	74302401	3/4 NPT MALE X 1/2 NPT FEMALE HEX HEAD BUSHING	1
26	71607403	ASCO VALVE PLUG CABLE 18mm 3m	2

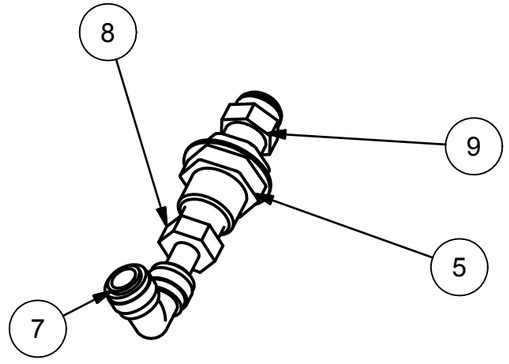
NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

*USE FOR IMPULSE W/O SERVERE SERVICE AND NON WR PUMP





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

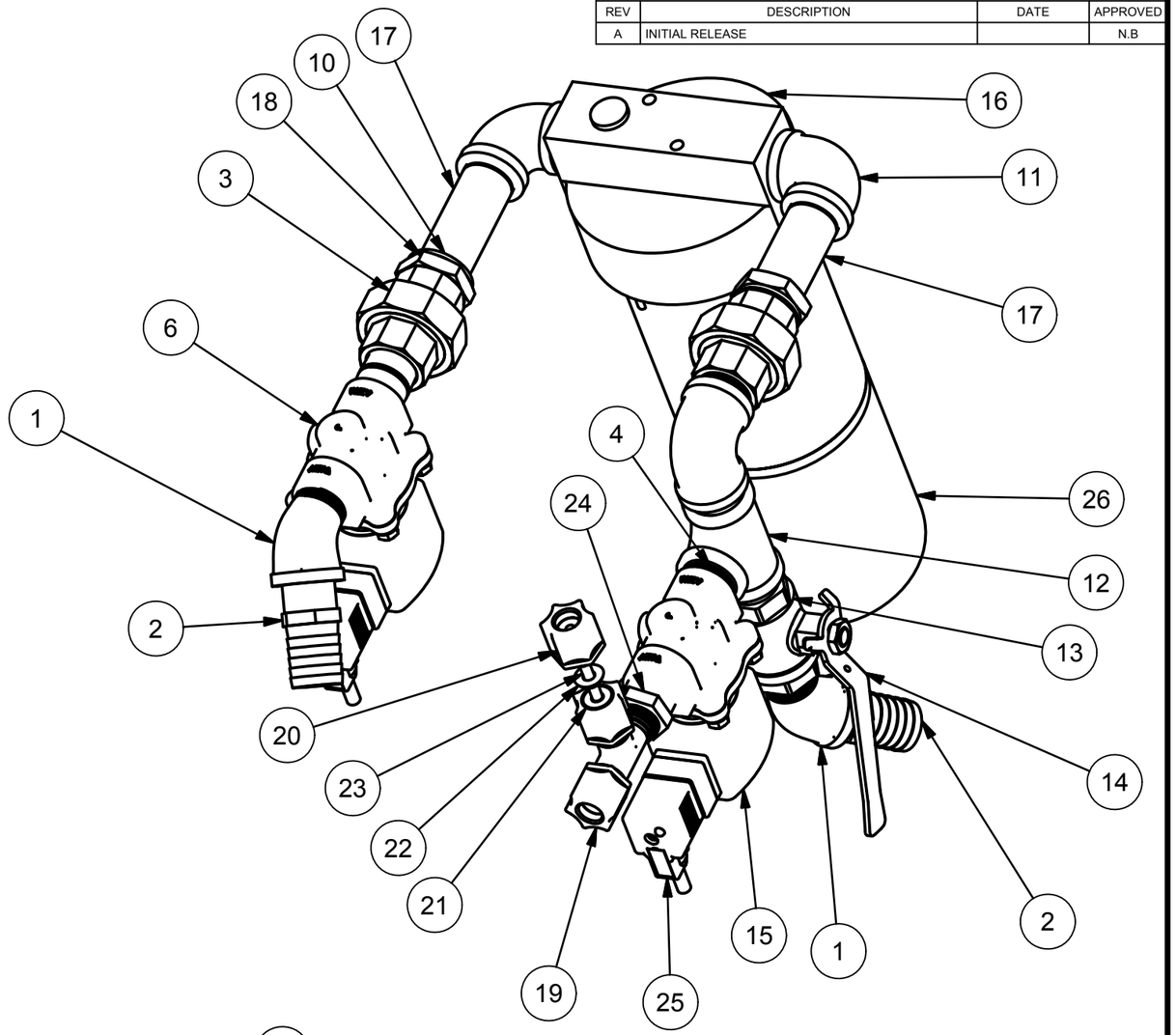
TITLE: MK3 LONG CUNO IMPULSE W/O SS

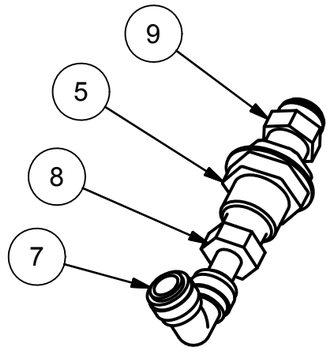
DWG NO.: MA185-0019 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	2
2	74103301	1 X 3/4 NPT MALE HOSE BARB	2
3	74301501	3/4 UNION, CAST	2
4	74303401	3/4 CLOSE NIPPLE	7
5	74300401	1/2 NPT X 1 1/2 BULK HEAD COUPLING	1
6	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
7	74203901	1/2 O.D. TUBE UNION EBOW, PLASTIC	1
8	74204901	1/2 O.D. TUBE x 1/2 NPT STEM ADAPTER, PLASTIC	1
9	110556C1	1/2 NPT AMLE X 1/2 STEM ADAPTER SWIVEL	1
10	74502404	PRESSURE-SEALING WASHER 3/4" S/S	3
11	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
12	74300901	3/4 NPT FEM TEE FORGED	1
13	73104501	BALL VALVE, 3/4 NPT BRASS 400PSI	1
14	125097C1	3/4 BALL VALVE HANDLE	1
15	73102101	ASCO VALVE, 3/4 NPT BRASS N.O. 24 VAC	1
16	72201201	HEAD, CUNO FILTER, BLUE ACETAL	1
17	74305701	3/4 X 4 NIPPLE W/2-1/2 EXTENDED THREAD ON ONE END, BRASS	2
18	74303001	3/4 LOCKNUT BRASS EXTRUDED	2
19	74205501	1/2 X 1/2 JACO MALE RUN TEE	1
20	74205401	1/2 JACO NUT WITH STAINLESS STEEL GRIPPER	1
21	71607001	GROMMET	1
22	71607101	GRIP RING	1
23	71018901A	TEMP SENSOR	1
24	74302401	3/4 NPT MALE X 1/2 NPT FEMALE HEX HEAD BUSHING	1
25	71607403	ASCO VALVE PLUG CABLE 18mm 3m	2
26	62200301	CUNO SUMP ONLY, 1M2 FILTER UNIT, 13.5/343MM, TRANSPARENT	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B





NOTE: FOR EACH ASSEMBLY, ADDITIONALLY USE:

OPTION 1: 1 INCH 45 DEG COPPER ELBOW (PART #74400101) OR

OPTION 2: TWO KUNO PAPER FILTERS (PART #72200401) AND A BLUE STICK

*USE FOR IMPULSE W/O SERVERE SERVICE AND NON WR PUMP

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: rowdy

TITLE: MK3 SHORT CUNO IMPULSE W/O SS

DWG NO.: MA185-0020 A

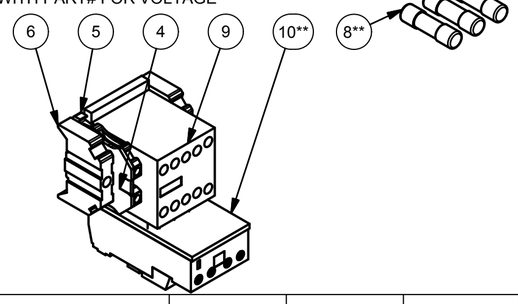
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/26/2018	CI

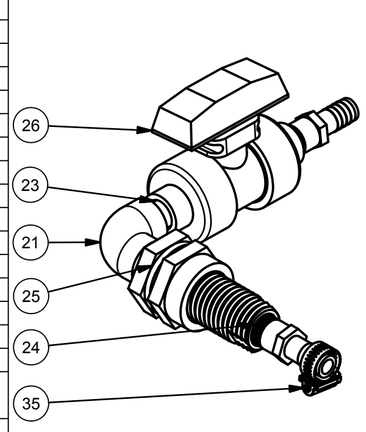
PARTS LIST

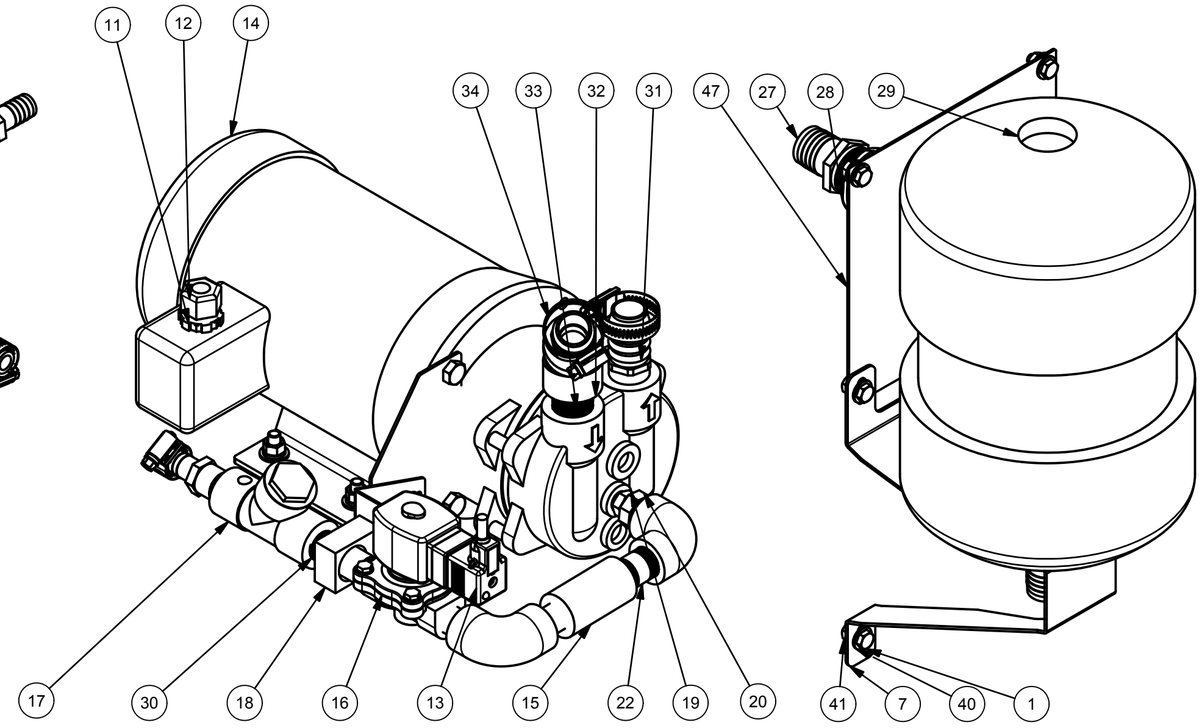
ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	6
2	109091C1	5/16-18 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
3	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	1
4	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
5	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
6	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
7	124800C1	MK3 WATER RING PUMP TANK SUPPORT	1
8**	71400901	Fuse 4 amp type aM	3
9	71404701	MINI CONTACTOR 24VAC	1
10**	71405101	LOVATO OVERLOAD 2.3-3.0 AMP	1
11	71601401	1/2 NPT SELING NUT	1
12	71605201	CORD GRIP, .35 - .47 DIA., 1/2 NPT GREY	1
13	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
14	72111501	7 CFM/ 198 LPM SIHI WATER RING PUMP WITH MOTOR	1
15	73107401	PVC FLOW CONTROL VALVE 1/2 NPT .75 GPM	1
16	73107501	Valve, 1/2 NPT brass N.C. 24VAC w/ DIN	1
17	74000101	PVC Y-Strainer 1/2 NPT Pipe 150 psi	1
18	74000301	Locking Nylon Pipe Hanger 3/4 to 7/8 O.D. Pipe, 9/16 High X 1 Inch Wide	1
19	74303701	1/4 NPT hex nipple - long	1
20	74500101	1/2 NPT Male X 1/4 NPT Female Reducing Hex Bushing Schedule 80, Dark Gray PVC	1
21	74500201	1/2 NPT Female X 1/2 NPT Female 90 Degree Elbow Schedule 80 Dark Gray PVC	3
22	74500301	1/2 NPT X 1/2 NPT X 2 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
23	74500401	1/2 NPT X 1/2 NPT X 1-1/8 INCH LONG THREADED PIPE NIPPLE SCHEDULE 80 DARK GREY PVC	4
24	74500601	Adapter 1/2 Inch Barbed (.635 O.D.) X 1/2 NPT Male Schedule 80 Dark Gray PVC	3
25	74500701	1/2 NPT Female Bulkhead Fitting 1/2 NPT Female X 1/2 NPT Female Gray PVC 1-3/8 Inch Hole Required	1
26	74500801	1/2 NPT Female Ball Valve Schedule 80 Gray CPVC Vito O-Rings	1
27	74501201	1" BARBED X 1 NPT MALE ADAPTER PVC	2
28	74501301	1 NPT X 1 NPT Female Bulkhead Fitting Gray PVC, 1-7/8 Inch Hole Diameter Required	1
29	74501801	Water and Air Separator Weldment (PVC)	1
30	74501901	1/2 NPT X 1/2 NPT X 3 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
31	74502201	1 In Tube X 3/4 NPT Barbed Pip	2
32	74502301	3/4 NPT FEMALE X 3/4 NPTFEMALE 45 DEGREE ELBOW SCHEDULE 80 DARK GRAY PVC	1
33	74502401	3/4 NPT X 3/4 NPT X 1-3/8 INCH THREADED PIPE NIPPLE CLOSE GRAY PVC	1
34	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
35	75003201	HOSE CLAMP, #8 WORM GEAR S/S	2
36	75102701	5/16 MED SPLIT LOCK WASHERS, S/S	4
37	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	4
38	75102901	5/16-18 HEX NUT, S/S	4
39	75103101	5/16 FLAT WASHER, 0.750 O.D., 0.06 THCK, S/S	8
40	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	12
41	75103801	1/4-20 HEX NUT, S/S	6
42	75110701	#10-32 X 1/2 LNG HEX HEAD MACHINE SCREW, S/S	2
43	75112501	3/8-16 X 1/2 LNG HEX HEAD CAP SCREW, S/S	2
44	75118601	#10-32 HEX NUT, S/S	2
45	76000501	PIPE HANGER MOUNTING BRACKET FOR LEM15/20 WATER-RING PUMP	1
46	76000601	PIPE HANGER SUPPORT BRACKET FOR LEM15/20 WATER-RING PUMP	1
47	76209901	MKII COVER EXHAUST PORT WATER RING PUMP	1
48	79501701	PVC VIBRATION MOUNTS	4
49	84400101	1 Inch NPT Close 304/304L Stainless Steel Pipe Nipple, 1-1/2 Inch Long Schedule 40 Close	1
49*	73301501	TUBING, 1 POLYWIRE	1 FT
50*	73302501	TUBING, 5/8 POLYWIRE	1 FT
51*	71604502	CORD 16/4 SOOW BLACK	6 FT

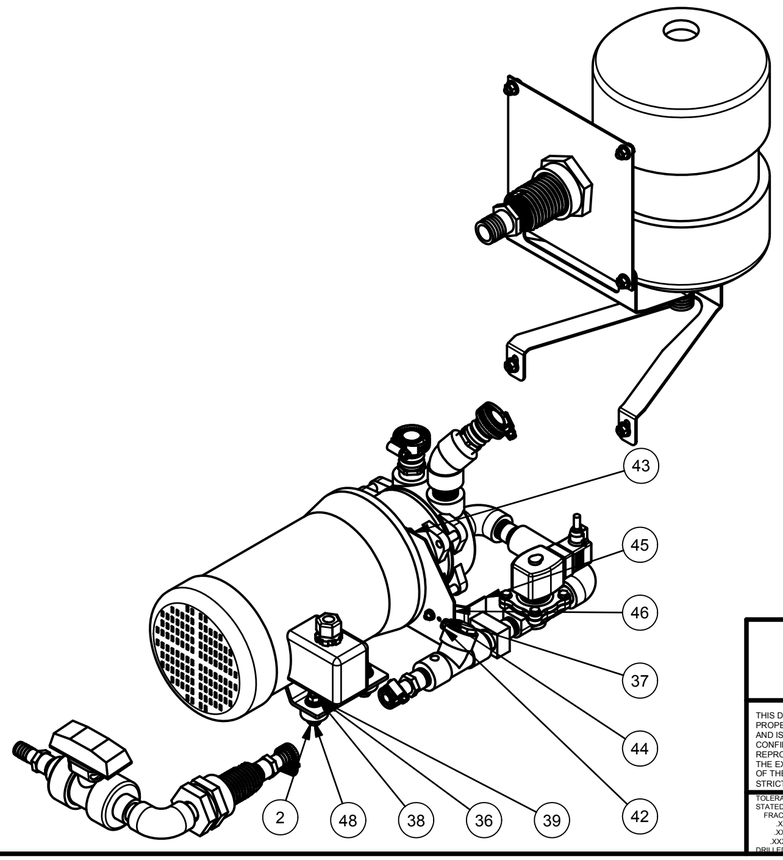
* NOT PICTURED
** REPLACE WITH PART# FOR VOLTAGE



VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 4.0
440-480 VAC 3 PHASE 60HZ	71400901 4 AMP	71400901 4 AMP	71400901 4 AMP	71405101 2.5







M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 7 CFM WATER RING PUMP

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL ± .015
.XX ± .015
.XXX ± .005
.XXXX ± .0005
DRILLED HOLE: STANDARD S.A.E.

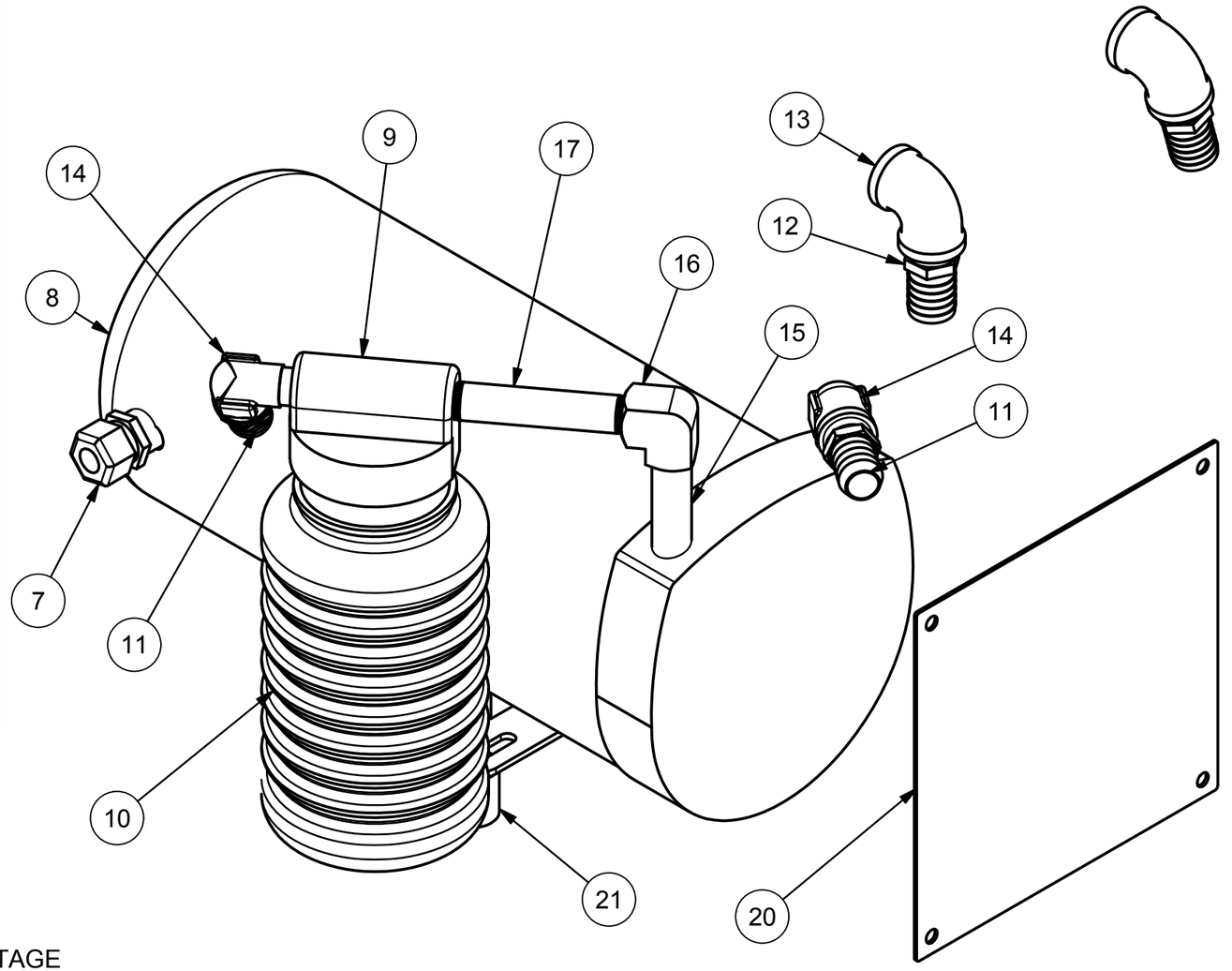
DWG NO.: MA250-0022 A

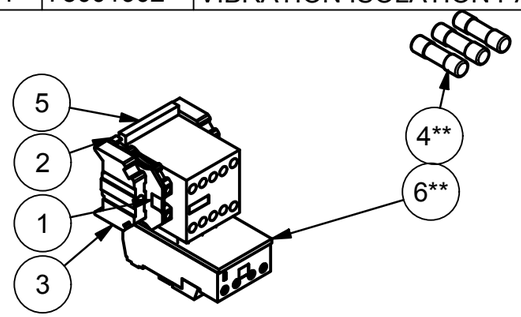
SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
2	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
3	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
4**	71400901	Fuse 4 amp type aM	3
5	71404701	MINI CONTACTOR 24VAC	1
6**	71404901	LOVATO OVERLOAD 0.9-1.5 AMP	1
7	71605201	CORD GRIP, .35 - .47 DIA., 1/2 NPT GREY	1
8	72105201	PUMP, 10 CFM, OILLESS DRY VANE	1
9	72107701	GAST FILTER HEAD FOR JAR, 3/8 NPT #AV805APC	1
10	72201701	JAR, VACUUM FILTER, RIBBED SIDES, PLASTIC	1
11	74103101	3/4 X 1/2 male hose barb	2
12	74103301	1 X 3/4 NPT MALE HOSE BARB	2
13	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	2
14	74304701	1/2F X 3/8M STREET ELBOW	2
15	74307901	3/8 NPT X 2-1/2 LONG BRASS NIPPLE	1
16	74308001	3/8 FEMALE ELBOW EXTRUDED	1
17	74309401	3/8 NPT X 4 IN PIPE NIPPLE	1
18*	72102001	GAST GASKET, PUMP FILTER/EXHAUST	1
19*	71604502	CORD 16/4 SOOW BLACK	6 FT
20	76203300	COVER MK III FAN DUCT	1
21	75001902	VIBRATION ISOLATION PAD	4

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/08/2018	CI
B	ADDED 75001902 ADN 76203301A	11/18/24	RB





* NOT PICTURED
** REPLACE WITH PART# FOR VOLTAGE REPLACEMENT VANES 72106201

VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-220 VAC 1 PHASE 50/60HZ	71400901 4 AMP	71400901 4 AMP	NONE	71405201 3.8
208-240 VAC 3 PHASE 50/60HZ	71400901 4 AMP	71400901 4 AMP	71400901 4 AMP	71405101 2.6
440-480 VAC 3 PHASE 60HZ	71400901 4 AMP	71400901 4 AMP	71400901 4 AMP	71404901 1.3

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 10 CFM PUMP ASSEMBLY

DWG NO.: MA250-0016 B

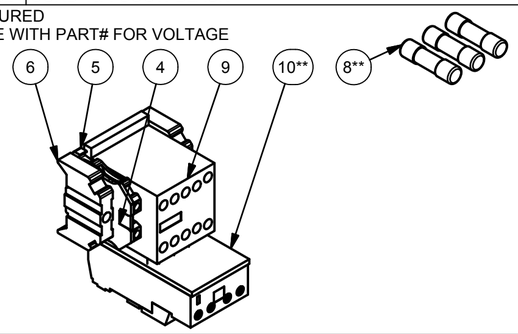
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/25/2018	CI

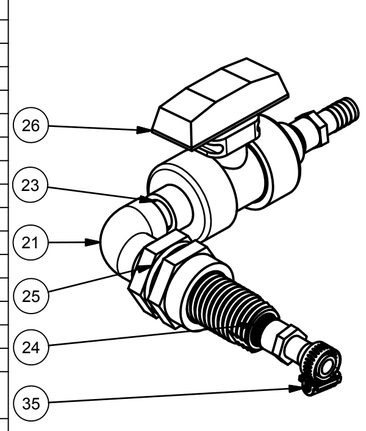
PARTS LIST

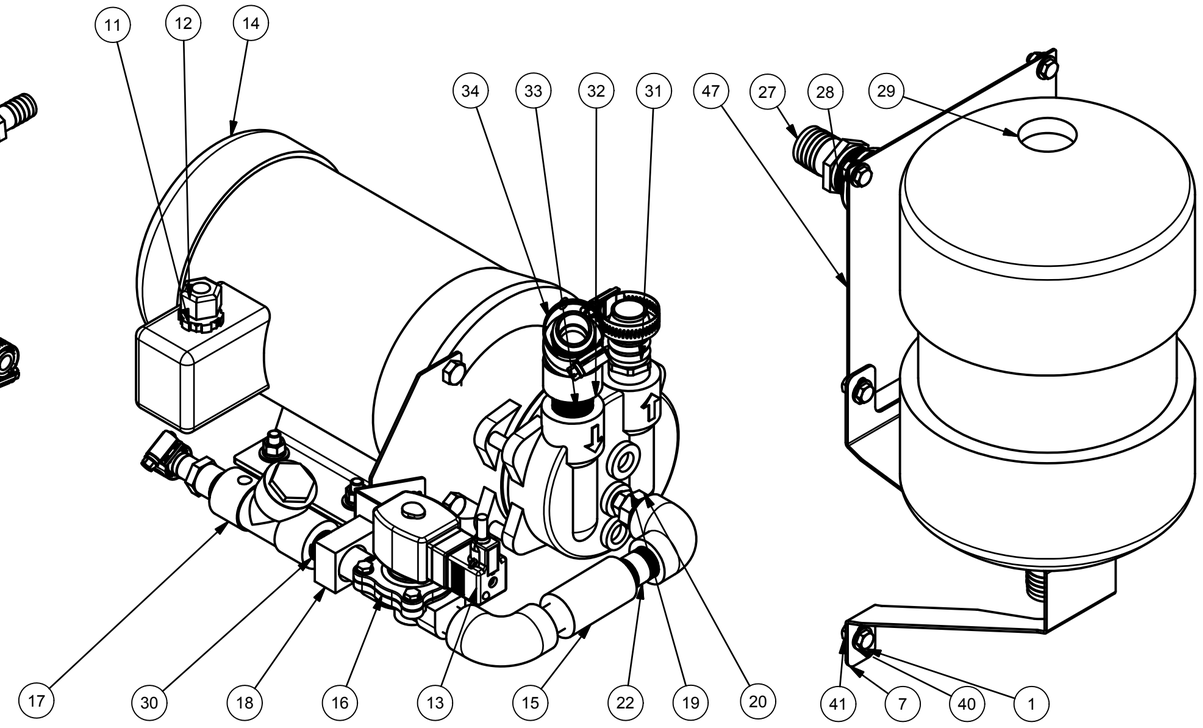
ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	6
2	109091C1	5/16-18 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
3	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	1
4	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
5	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
6	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
7	124800C1	MK3 WATER RING PUMP TANK SUPPORT	1
8**	71401001	Fuse 6 amp type aM	3
9	71404701	MINI CONTACTOR 24VAC	1
10**	71405101	LOVATO OVERLOAD 2.3-3.0 AMP	1
11	71601401	1/2 NPT SELING NUT	1
12	71605201	CORD GRIP, .35 - .47 DIA., 1/2 NPT GREY	1
13	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
14	72111601	13 CFM/ 368 LPM SIHI WATER RING PUMP WITH MOTOR	1
15	73107401	PVC FLOW CONTROL VALVE 1/2 NPT .75 GPM	1
16	73107501	Valve, 1/2 NPT brass N.C. 24VAC w/ DIN	1
17	74000101	PVC Y-Strainer 1/2 NPT Pipe 150 psi	1
18	74000301	Locking Nylon Pipe Hanger 3/4 to 7/8 O.D. Pipe, 9/16 High X 1 Inch Wide	1
19	74303701	1/4 NPT hex nipple - long	1
20	74500101	1/2 NPT Male X 1/4 NPT Female Reducing Hex Bushing Schedule 80, Dark Gray PVC	1
21	74500201	1/2 NPT Female X 1/2 NPT Female 90 Degree Elbow Schedule 80 Dark Gray PVC	3
22	74500301	1/2 NPT X 1/2 NPT X 2 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
23	74500401	1/2 NPT X 1/2 NPT X 1-1/8 INCH LONG THREADED PIPE NIPPLE SCHEDULE 80 DARK GREY PVC	4
24	74500601	Adapter 1/2 Inch Barbed (.635 O.D.) X 1/2 NPT Male Schedule 80 Dark Gray PVC	3
25	74500701	1/2 NPT Female Bulkhead Fitting 1/2 NPT Female X 1/2 NPT Female Gray PVC 1-3/8 Inch Hole Required	1
26	74500801	1/2 NPT Female Ball Valve Schedule 80 Gray CPVC Vito O-Rings	1
27	74501201	1" BARBED X 1 NPT MALE ADAPTER PVC	2
28	74501301	1 NPT X 1 NPT Female Bulkhead Fitting Gray PVC, 1-7/8 Inch Hole Diameter Required	1
29	74501801	Water and Air Separator Weldment (PVC)	1
30	74501901	1/2 NPT X 1/2 NPT X 3 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
31	74502201	1 In Tube X 3/4 NPT Barbed Pip	2
32	74502301	3/4 NPT FEMALE X 3/4 NPTFEMALE 45 DEGREE ELBOW SCHEDULE 80 DARK GRAY PVC	1
33	74502401	3/4 NPT X 3/4 NPT X 1-3/8 INCH THREADED PIPE NIPPLE CLOSE GRAY PVC	1
34	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
35	75003201	HOSE CLAMP, #8 WORM GEAR S/S	2
36	75102701	5/16 MED SPLIT LOCK WASHERS, S/S	4
37	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	4
38	75102901	5/16-18 HEX NUT, S/S	4
39	75103101	5/16 FLAT WASHER, 0.750 O.D., 0.06 THCK, S/S	8
40	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	12
41	75103801	1/4-20 HEX NUT, S/S	6
42	75110701	#10-32 X 1/2 LNG HEX HEAD MACHINE SCREW, S/S	2
43	75112501	3/8-16 X 1/2 LNG HEX HEAD CAP SCREW, S/S	2
44	75118601	#10-32 HEX NUT, S/S	2
45	76000501	PIPE HANGER MOUNTING BRACKET FOR LEM15/20 WATER-RING PUMP	1
46	76000601	PIPE HANGER SUPPORT BRACKET FOR LEM15/20 WATER-RING PUMP	1
47	76209901	MKII COVER EXHAUST PORT WATER RING PUMP	1
48	79501701	PVC VIBRATION MOUNTS	4
49	84400101	1 Inch NPT Close 304/304L Stainless Steel Pipe Nipple, 1-1/2 Inch Long Schedule 40 Close	1
49*	73301501	TUBING, 1 POLYWIRE	1 FT
50*	73302501	TUBING, 5/8 POLYWIRE	1 FT
51*	71604502	CORD 16/4 SOOW BLACK	6 FT

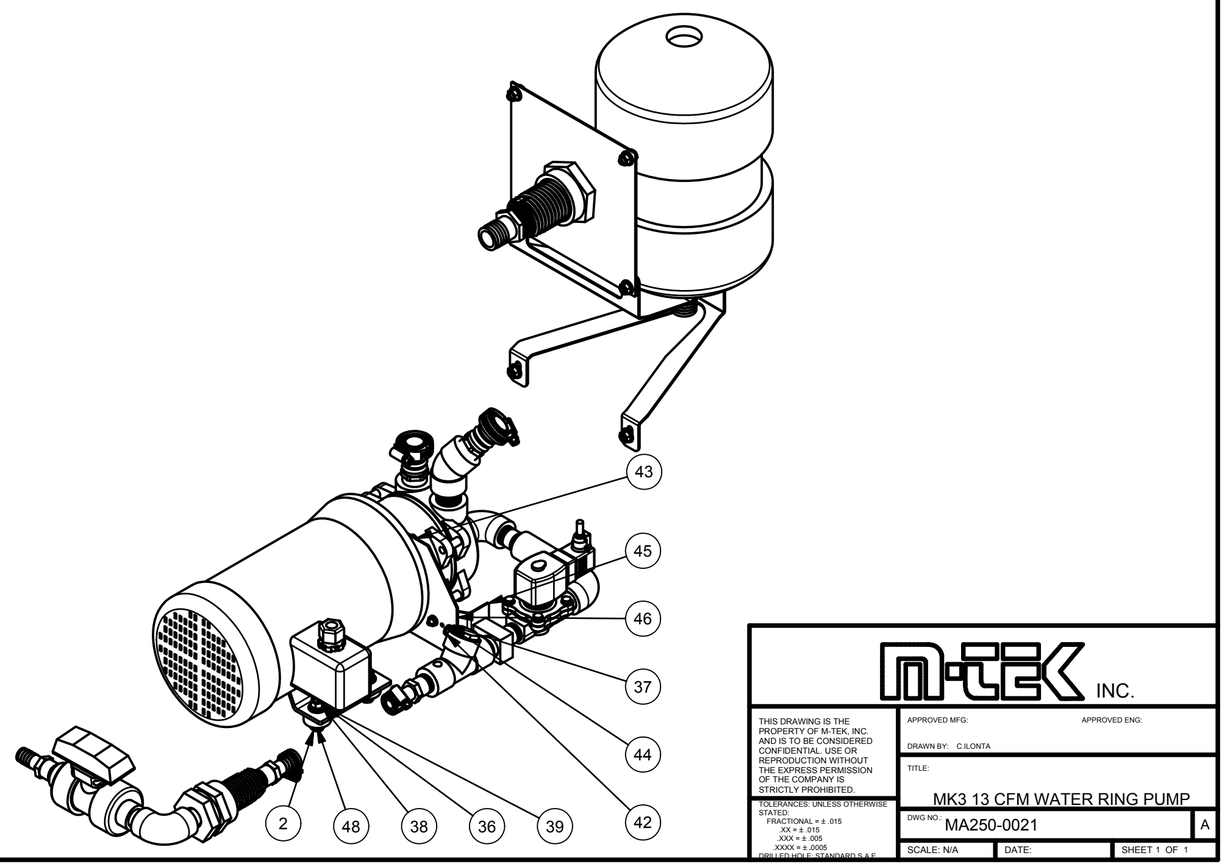
* NOT PICTURED
** REPLACE WITH PART# FOR VOLTAGE



VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 4.0
440-480 VAC 3 PHASE 60HZ	71400901 4 AMP	71400901 4 AMP	71400901 4 AMP	71405101 2.5







M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 13 CFM WATER RING PUMP

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL ± .015
.XX ± .015
.XXX ± .005
.XXXX ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA250-0021 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST

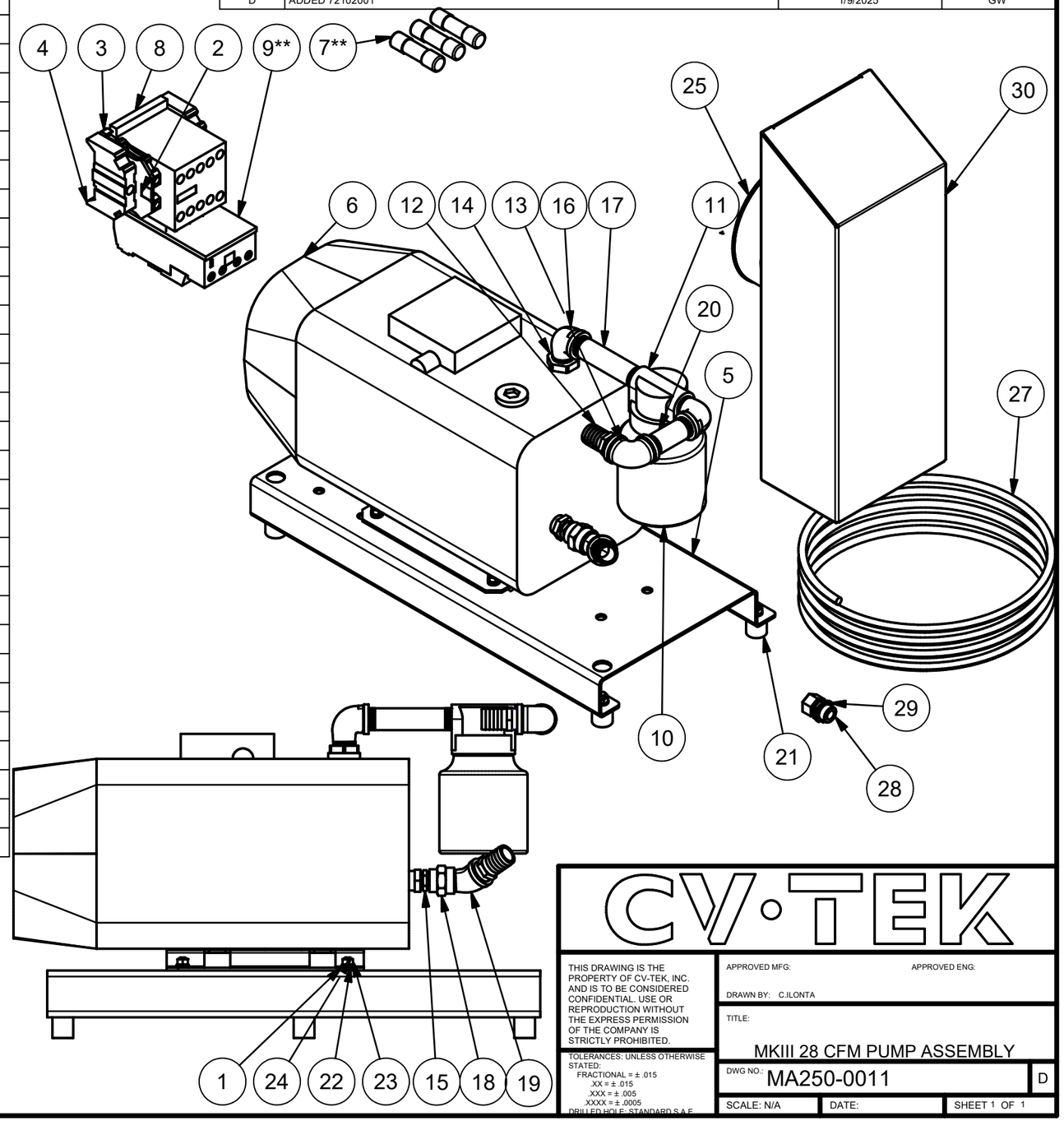
ITEM	PART NO.	DESCRIPTION	QTY
1	109065C1	5/16 FLAT WASHER, 0.570 O.D., 0.07 THCK, S/S	4
2	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
3	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK	1
4	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
5	122066C1	40 CFM PUMP MOUNT BASE	1
6	125081C1	28 CFM VACUUM PUMP	1
7**	71401001	Fuse 6 amp type aM	3
8	71404701	MINI CONTACTOR 24VAC	1
9**	71405201	LOVATO OVERLOAD 3.0-5.0 AMP	1
10	72104101	ALUMINUM JAR, VACUUM FILTER, 32 OZ	1
11	72106101	FILTER HEAD 3/4 NPT	1
12	74103301	1 X 3/4 NPT MALE HOSE BARB	2
13	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	1
14	74302701	1 NPT MALE X 3/4 NPT FEMALE HEX HEAD BUSHING	1
15	74304001	1/2 HEX NIPPLE	1
16	74304201	3/4 NPT STREET ELBOW, CAST	2
17	74305201	3/4 X 5 long nipple	1
18	74305401	3/4F X 1/2F FEMALE REDUCER COUPLING	1
19	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1
20	74307601	3/4 X 3-1/2 LONG NIPPLE	1
21	75001902	VIBRATION ISOLATION PAD	5
22	75102701	5/16 MED SPLIT LOCK WASHERS, S/S	8
23	75102901	5/16-18 HEX NUT, S/S	8
24	75107601	5/16-18 X 3/4 LNG HEX HEAD CAP SCREW, S/S	4
25	71500401	FAN, ROUND 6.75 24VDC	1
26	71500701	GUARD, FAN	1
27	71500601	CORD; 16/4 SO; BLACK 600V 5.5'	1
28	71605101 1	.20-.35 DIA. CORD GRIP, 1/2 NPT	1
29	71605301	1/2" LOCK NUT	1
30	123250C1	EXHAUST DUCT,MARK III PYLON WELDMENT	1
31	72102001	GASKET, FILTER / EXHST HEAD AA405	1

** REPLACE WITH PART# FOR VOLTAGE
* NOT PICTURED

VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71402501 16 AMP	71402501 16 AMP	71402501 16 AMP	71405401 TBD
440-480 VAC 3 PHASE 60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 TBD

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A		11/22/2019	MTEKCORP\\bbange
B	ADDED 123250C1 AND 71500401	8/30/2023	MTEKCORP\\\\rowdy
C	ADDED 71500701,71500601,71605101 & 71605301	11/21/24	RB
D	ADDED 72102001	1/9/2025	GW



CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

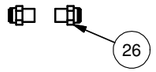
TITLE: MKIII 28 CFM PUMP ASSEMBLY

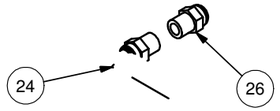
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

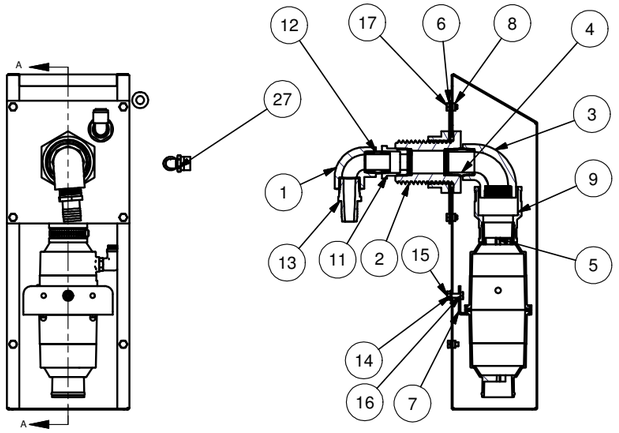
DWG NO.: MA250-0011 D

SCALE: N/A DATE: SHEET 1 OF 1

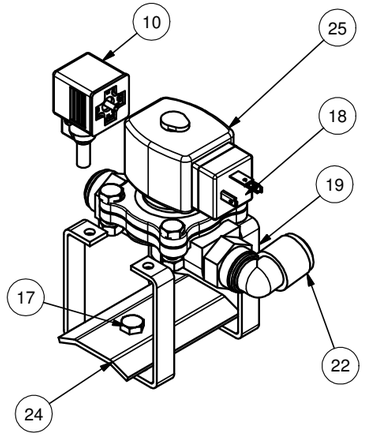
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/14/2018	CI
B	ADDED 269P-08-08	11/22/24	RB

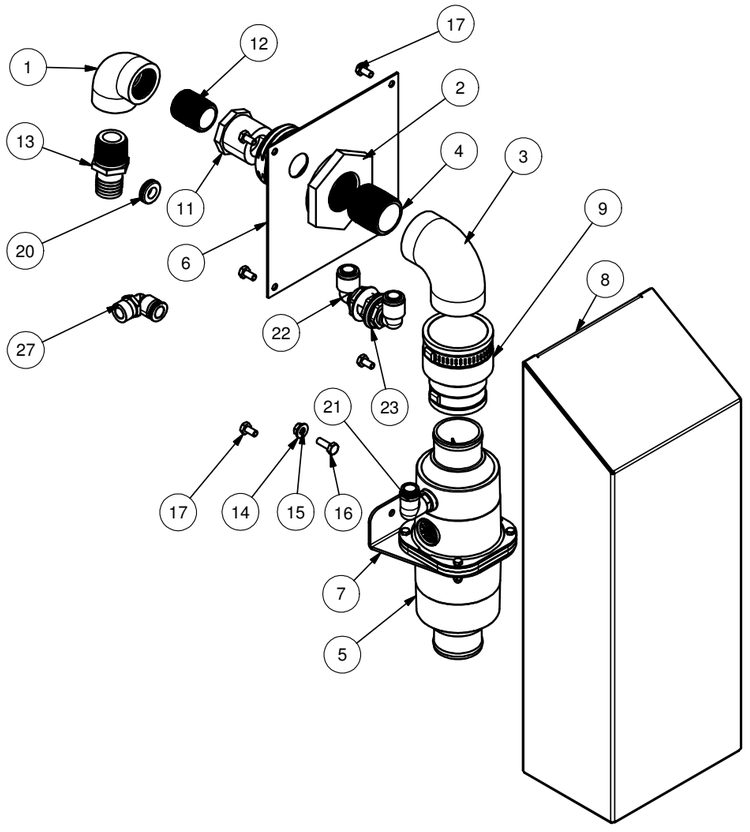


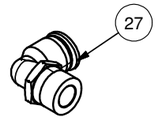




SECTION A-A







PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	121178C1	THICK WALL 90 DEG ELBOW THREADED PIPE 1 NPT	1
2	121820C1	THROUGHT WALL FITTING PVC, FEM, NPT, 1-1/4"	1
3	121898C1	90 Deg THREADED ELBOW, 1-1/4 NPTF PVC	1
4	121899C1	GRAY PVC FULLY THREADED NIPPLE, 1-1/4 NPT, SCHEDULE 80	1
5	122904C1	PUMP, VACUUM, ROUND COAX CARTRIDGE STYLE	1
6	123248C1	PIAB ADAPTER PLATE	1
7	123249C1	PIAB VACUUM POWER COAX PLATE	1
8	123250C1	EXHAUST DUCT,MARK III PYLON WELDMENT	1
9	123964C1	PIAB PUMP 2" X 1 1/2" COUPLING	1
10	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
11	74500901	1-1/4M NPT X 1F NPT REDUCING HEX BUSHING PVC	1
12	74501001	1 NPT X 1 NPT X 1-1/2 THREADED PIPE CLOSE NIPPLE PVC	1
13	74501201	1" BARBED X 1 NPT MALE ADAPTER PVC	1
14	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	2
15	75103801	1/4-20 HEX NUT, S/S	6
16	75106401	1/4-20 X 3/4 LNG HEX HEAD CAP SCREW, S/S	1
17	75109501	1/4-20 X 1/2 LNG HEX HEAD CAP SCREW, S/S	7
18	75109601	1/4-20 X 7/8 LNG HEX HEAD CAP SCREW, S/S	4
19	76204401A	STAND OFF MAC VALVE	2
20	79501501	RUBBER GROMMET 1/2 ID HOLE, 3/32 GROOVE WIDTH, 1.0 OD	1
21	74103001	1/2 X 3/8 Parker Male Elbow	1
22	110517C1	1/2 MALE TUBE O.D. x 1/2 TUBE PLUG IN ELBOW, PLASTIC	3
23	110508C1	1/2 BLKHD UNION PLASTIC	1
24	76204501A	Plate, Mac hold down plate for stand off	1
25	73107501	Valve, 1/2 NPT brass N.C. 24VAC w/ DIN	1
26	110556C1	1/2 NPT AMLE X 1/2 STEM ADAPTER SWIVEL	2
27	269P-08-08	FITTING.ELB.1/2 NPT TO 1/2 OD	1

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILL/REAMER STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: BBANGE

TITLE: MK3 PIAB HIGH FLOW PUMP ASSEMBLY

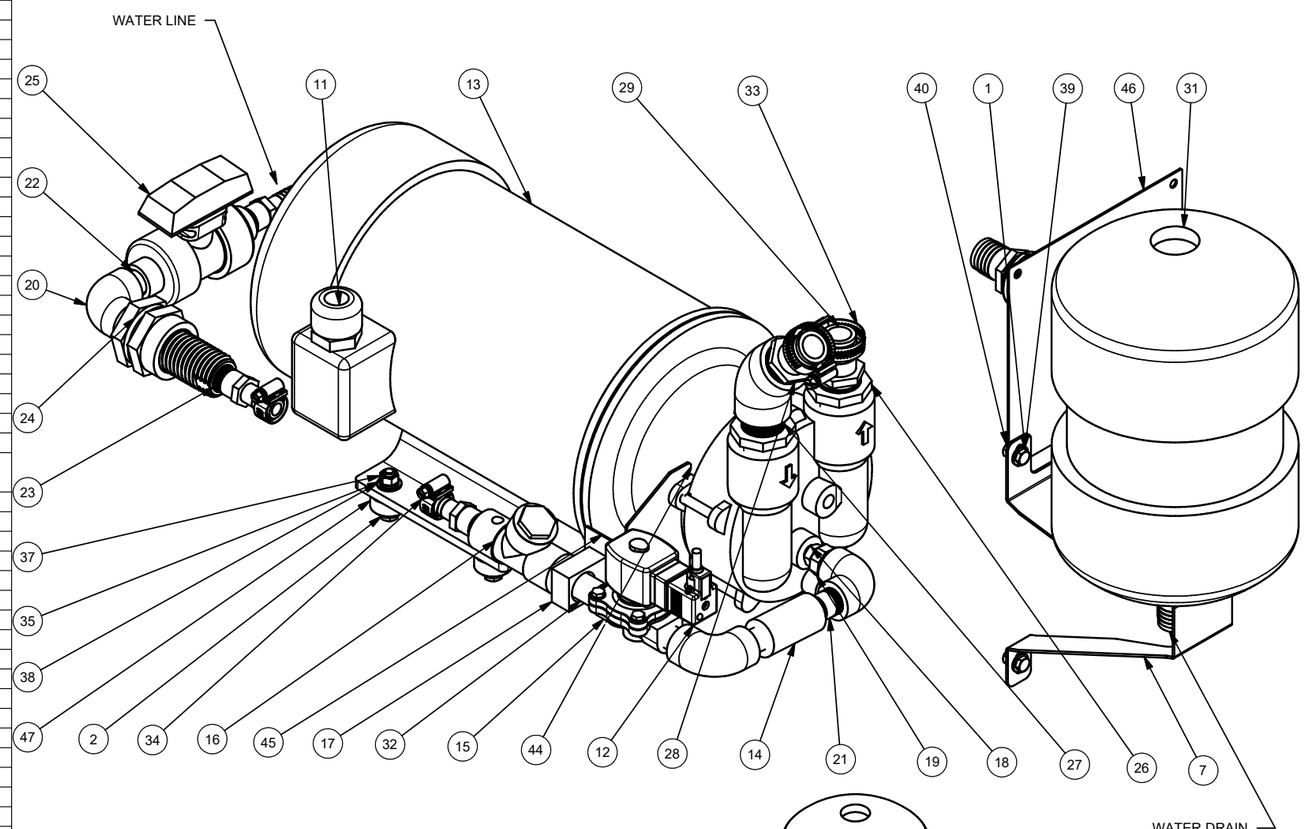
DWG NO.: MA250-0018 B

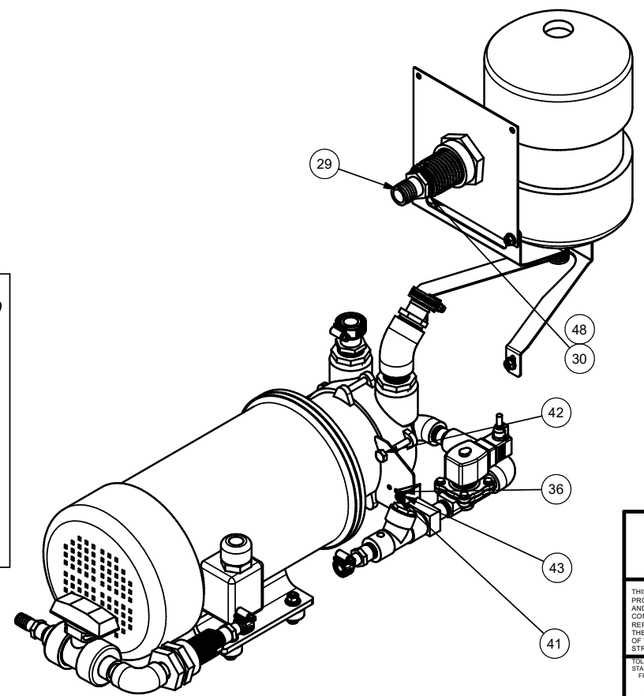
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	02/22/2016	N.B
B	ADDED 74501201 X1	2/6/2024	RB

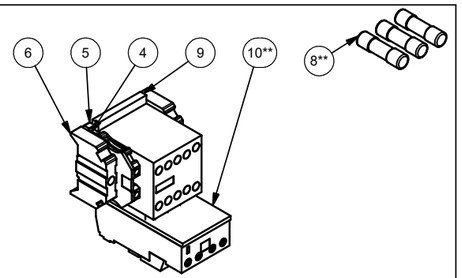
PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	4
2	109091C1	5/16-18 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
3	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	1
4	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
5	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
6	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
7	124800C1	MK3 WATER RING PUMP TANK SUPPORT	1
8**	71401001	Fuse 6 amp type aM	3
9	71404701	MINI CONTACTOR 24VAC	1
10**	71405201	LOVATO OVERLOAD 3.0-5.0 AMP	1
11	71604801	CORD GRIP,.375-.437, 3/4 WOOD	1
12	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
13	72111401	WATER RING PUMP 60	1
14	73107301	1/2 NPT, .75 GPM, EPR Seal, PVC Flow Control Valve	1
15	73107501	Valve, 1/2 NPT brass N.C. 24VAC w/ DIN	1
16	74000101	PVC Y-Strainer 1/2 NPT Pipe 150 psi	1
17	74000301	Locking Nylon Pipe Hanger 3/4 to 7/8 O.D. Pipe, 9/16 High X 1 Inch Wide	1
18	74303701	1/4 NPT hex nipple - long	1
19	74500101	1/2 NPT Male X 1/4 NPT Female Reducing Hex Bushing Schedule 80, Dark Gray PVC	1
20	74500201	1/2 NPT Female X 1/2 NPT Female 90 Degree Elbow Schedule 80 Dark Gray PVC	3
21	74500301	1/2 NPT X 1/2 NPT X 2 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
22	74500401	1/2 NPT X 1/2 NPT X 1-1/8 INCH LONG THREADED PIPE NIPPLE GREY PVC	4
23	74500601	Adapter 1/2 Inch Barbed (.635 O.D.) X 1/2 NPT Male Schedule 80 Dark Gray PVC	3
24	74500701	1/2 NPT Female Bulkhead Fitting 1/2 NPT Female X 1/2 NPT Female Gray PVC 1-3/8 Inch Hole Required	1
25	74500801	1/2 NPT Female Ball Valve Schedule 80 Gray CPVC Vito O-Rings	1
26	74500901	1-1/4M NPT X 1F NPT REDUCING HEX BUSHING PVC	2
27	74501001	1 NPT X 1 NPT X 1-1/2 THREADED PIPE CLOSE NIPPLE PVC	1
28	74501101	1 NPT Female X 1 NPT Female 45 Degree Elbow Schedule 80 Dark Gray PVC	1
29	74501201	1" BARBED X 1 NPT MALE ADAPTER PVC	4
30	74501301	1 NPT X 1 NPT Female Bulkhead Fitting Gray PVC, 1-7/8 Inch Hole Diameter Required	1
31	74501801	Water and Air Separator Weldment (PVC)	1
32	74501901	1/2 NPT X 1/2 NPT X 3 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
33	75001701	HOSE CLAMP #16 WORM GEAR S/S	2
34	75003201	HOSE CLAMP, #8 WORM GEAR S/S	2
35	75102701	5/16 MED SPLIT LOCK WASHERS, S/S	4
36	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	4
37	75102901	5/16-18 HEX NUT, S/S	4
38	75103101	5/16 FLAT WASHER, 0.750 O.D., 0.06 THCK, S/S	8
39	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	8
40	75103801	1/4-20 HEX NUT, S/S	4
41	75110701	#10-32 X 1/2 LNG HEX HEAD MACHINE SCREW, S/S	2
42	75112501	3/8-16 X 1/2 LNG HEX HEAD CAP SCREW, S/S	1
43	75118601	#10-32 HEX NUT, S/S	4
44	76000401A	PIPE HANGER SUPPORT BRACKET FOR LEM60 WATER-RING PUMP	1
45	76000701A	Pipe Hanger Mounting Bracket LEM60 Water-Ring Pump	1
46	76209901	MKII COVER EXHAUST PORT WATER RING PUMP	1
47	79501701	PVC VIBRATION MOUNTS	4
48	84400101	1 Inch NPT Close 304/304L Stainless Steel Pipe Nipple, 1-1/2 Inch Long	1
49*	73302501	TUBING, 5/8 POLYWIRE	1 FT
50*	73301501	TUBING, 1 POLYWIRE	1.5 FT
51*	71604502	CORD 16/4 SOOW BLACK	6 FT





* NOT PICTURED
** REPLACE WITH PART# FOR VOLTAGE



COMPONENTS NEEDED FOR PUMP UPGRADE ONLY

VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71402501 16 AMP	71402501 16 AMP	71402501 16 AMP	71405401 8.5
440-480 VAC 3 PHASE 60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 3.9

M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL ± ± .015
.XX ± ± .015
.XXX ± ± .005
.XXXX ± ± .0005
DRAFT PER ANSI Y-14.5M STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.SLONTA

TITLE: MK3 38 CFM WATER RING PUMP

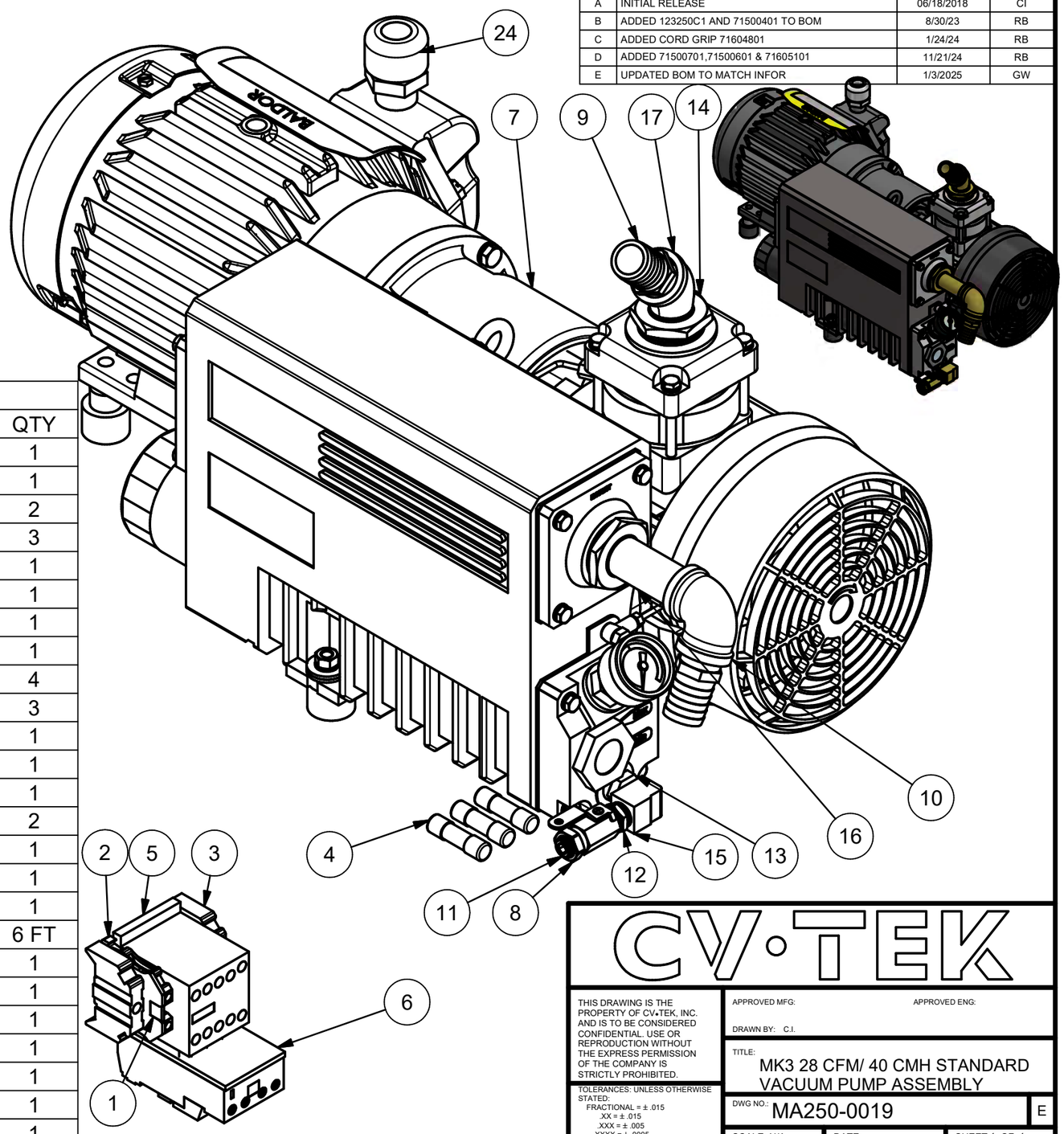
DWG NO.: MA250-0017 A

SCALE: N/A DATE: 1/14/2016 SHEET 1 OF 1

VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71401201 10 AMP	71401201 4 AMP	71401201 4 AMP	71405301 6.0
440-480 VAC 3 PHASE 60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 3.0

** REPLACE WITH
PART# FOR VOLTAGE
* NOT PICTURED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/18/2018	CI
B	ADDED 123250C1 AND 71500401 TO BOM	8/30/23	RB
C	ADDED CORD GRIP 71604801	1/24/24	RB
D	ADDED 71500701,71500601 & 71605101	11/21/24	RB
E	UPDATED BOM TO MATCH INFOR	1/3/2025	GW



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
2	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK	1
3	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
4	71401001	Fuse 6 amp type aM	3
5	71404701	MINI CONTACTOR 24VAC	1
6	71405201	LOVATO OVERLOAD 3.0-5.0 AMP	1
7	72106501	BUSCH 28 CFM PUMP, STANDARD	1
8	73103601	BALL VALVE, 1/4 NPT, 2-WAY, BRASS	1
9	74103301	1 X 3/4 NPT MALE HOSE BARB	4
10	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
11	74301701	1/4 plug, hex countersunk	1
12	74302201	3/8M X 1/4F hex head bushing	1
13	74302301	1/2 NPT MALE x 3/8 NPT FEMALE HEX HEAD BUSHING, BRASS	1
14	74303801	1-1/4M X 3/4 HEX HEAD BUSHING	2
15	74304501	3/8 STREET ELBOW	1
16	74305001	3/4 NPT X 3 LONG NIPPLE, BRASS	1
17	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1
18*	71604502	CORD 16/4 SOOW BLACK	6 FT
19*	123250C1	EXHAUST DUCT WELDMENT	1
20*	71500401	FAN; ROUND 6.75 24DC	1
21*	71500701	Guard; fan 6.7 DC fan	1
22*	71500601	Fan cord; 6.7 dc fan	1
23*	71605101	CORD GRIP; .20-.35 1/2 NPT	1
24	71604801	CORD GRIP,.375-.437, 3/4 WOOD	1
25*	71605201	CORD GRIP, .35 - .47 DIA., 1/2 NPT GREY	1

CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.I.

TITLE: MK3 28 CFM/ 40 CMH STANDARD VACUUM PUMP ASSEMBLY

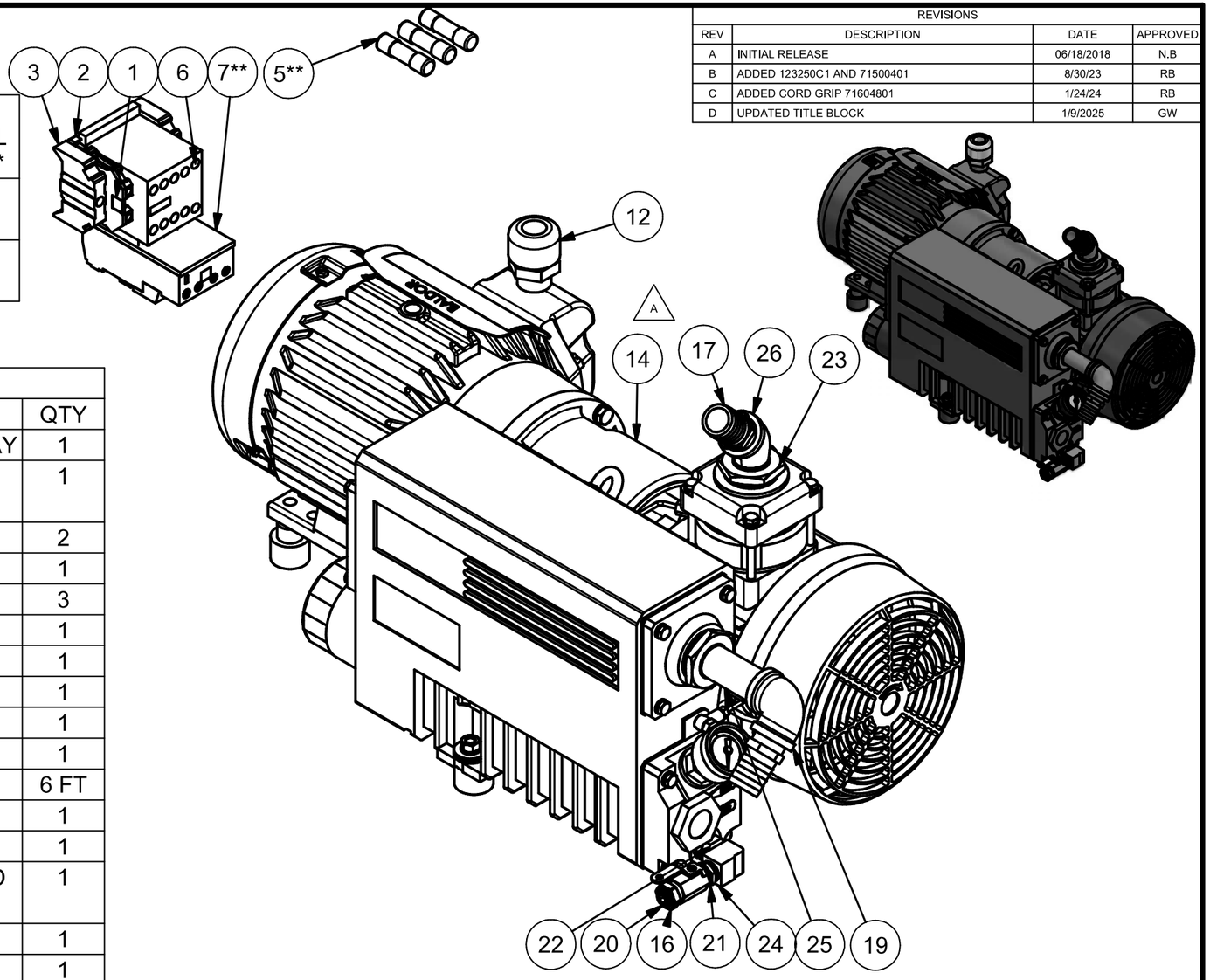
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ±.015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA250-0019 E

SCALE: N/A DATE: SHEET 1 OF 1

VOLTAGE	FUSE F1	FUSE F2	FUSE F3	MOTOR STARTER OL SETTINGS **
208-240 VAC 3 PHASE 50/60HZ	71401201 10 AMP	71401201 4 AMP	71401201 4 AMP	71405301 6.0
440-480 VAC 3 PHASE 60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 3.0

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/18/2018	N.B
B	ADDED 123250C1 AND 71500401	8/30/23	RB
C	ADDED CORD GRIP 71604801	1/24/24	RB
D	UPDATED TITLE BLOCK	1/9/2025	GW



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
2	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
3	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
4*	123250C1	EXHAUST DUCT WELDMENT	1
5**	71401001	Fuse 6 amp type aM	3
6	71404701	MINI CONTACTOR 24VAC	1
7**	71405201	LOVATO OVERLOAD 3.0-5.0 AMP	1
8*	71500401	FAN; ROUND 6.75 24VDC	1
9*	71500601	Fan cord; 6.7 dc fan	1
10*	71500701	Guard; fan 6.7 DC fan	1
11	71604502	CORD 16/4 SOOW BLACK	6 FT
12	71604801	CORD GRIP,.375-.437, 3/4 WOOD	1
13*	71605101	CORD GRIP; .20-.35 1/2 NPT	1
14	72105501	BUSCH 28 CFM / 40 CMH O2 VACUUM PUMP, OXIGEN RATED	1
15*	72202101	Wrench; for Cuno sump	1
16	73103601	BALL VALVE, 1/4 NPT, 2-WAY, BRASS	1
17	74103301	1 X 3/4 NPT MALE HOSE BARB	4
18*	74203001	3/8 X 1/4 male conn. plastic	1
19	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	3
20	74301701	1/4 plug, hex countersunk	1
21	74302201	3/8M X 1/4F hex head bushing	1
22	74302301	1/2 NPT MALE x 3/8 NPT FEMALE HEX HEAD BUSHING, BRASS	1
23	74303801	1-1/4M X 3/4 HEX HEAD BUSHING	2
24	74304501	3/8 STREET ELBOW	1
25	74305001	3/4 NPT X 3 LONG NIPPLE, BRASS	1
26	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1

MUST BE O2 CLEANED

** REPLACE WITH PART# FOR VOLTAGE
*NOT PICTURED

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

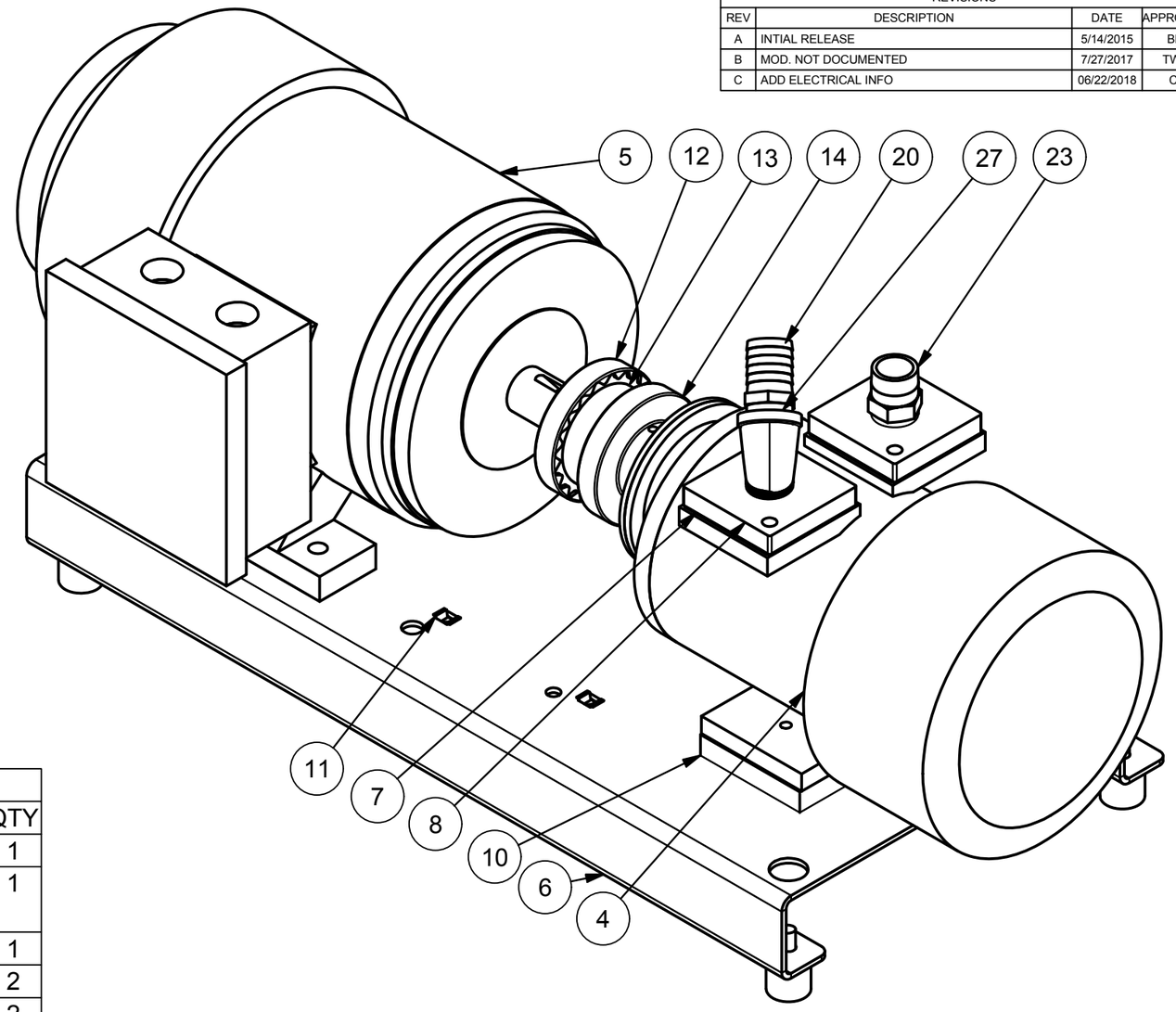
DRAWN BY: C.ILONTA

TITLE: MK3 28 CFM / 40 CMH O2 VACUUM PUMP OXIGEN RATED, ASSEMBLY

DWG NO.: MA250-0020 D

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INTIAL RELEASE	5/14/2015	BB
B	MOD. NOT DOCUMENTED	7/27/2017	TWL
C	ADD ELECTRICAL INFO	06/22/2018	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
4	122064C1	40 CFM DRY ROTARY VANE VACUUM PUMP	1
5	122065C1	GENERAL PURPOSE AC MOTOR, 3HP, 1800 RPM, 182T FRAME, 3 PHASE	1
6	122066C1	40 CFM PUMP MOUNT BASE	1
7	122069C1	40 CFM PUMP GASKET	2
8	122070C1	40 CFM PUMP INLET/OUTLET BLOCK	2
10	122072C1	40 CFM PUMP SPACER	2
11	122073C1	CLIP-ON NUT 1/4-20	4
12	122096C1	ELASTOMER IN SHEAR COUPLING FLANGE, 1-1/8 BORE w/KEYWAY	1
13	122098C1	ELASTOMER IN SHEAR COUPLING INSERT	1
14	122099C1	ELASTOMER IN SHEAR COUPLING FLANGE, 28mm BORE w/KEYWAY FOR PUMP	1
20	74103301	1 X 3/4 NPT MALE HOSE BARB	2
23	74304101	3/4 NPT HEX NIPPLE, BRASS	1
27	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1

CV·TEK

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

APPROVED MFG: APPROVED ENG:

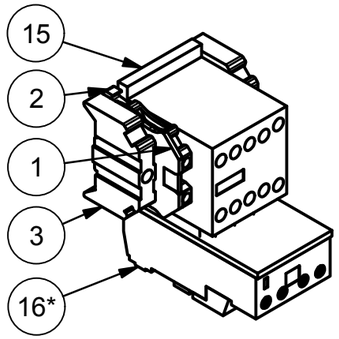
DRAWN BY: T.L.

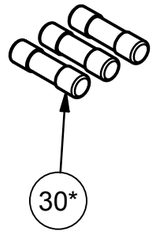
TITLE:

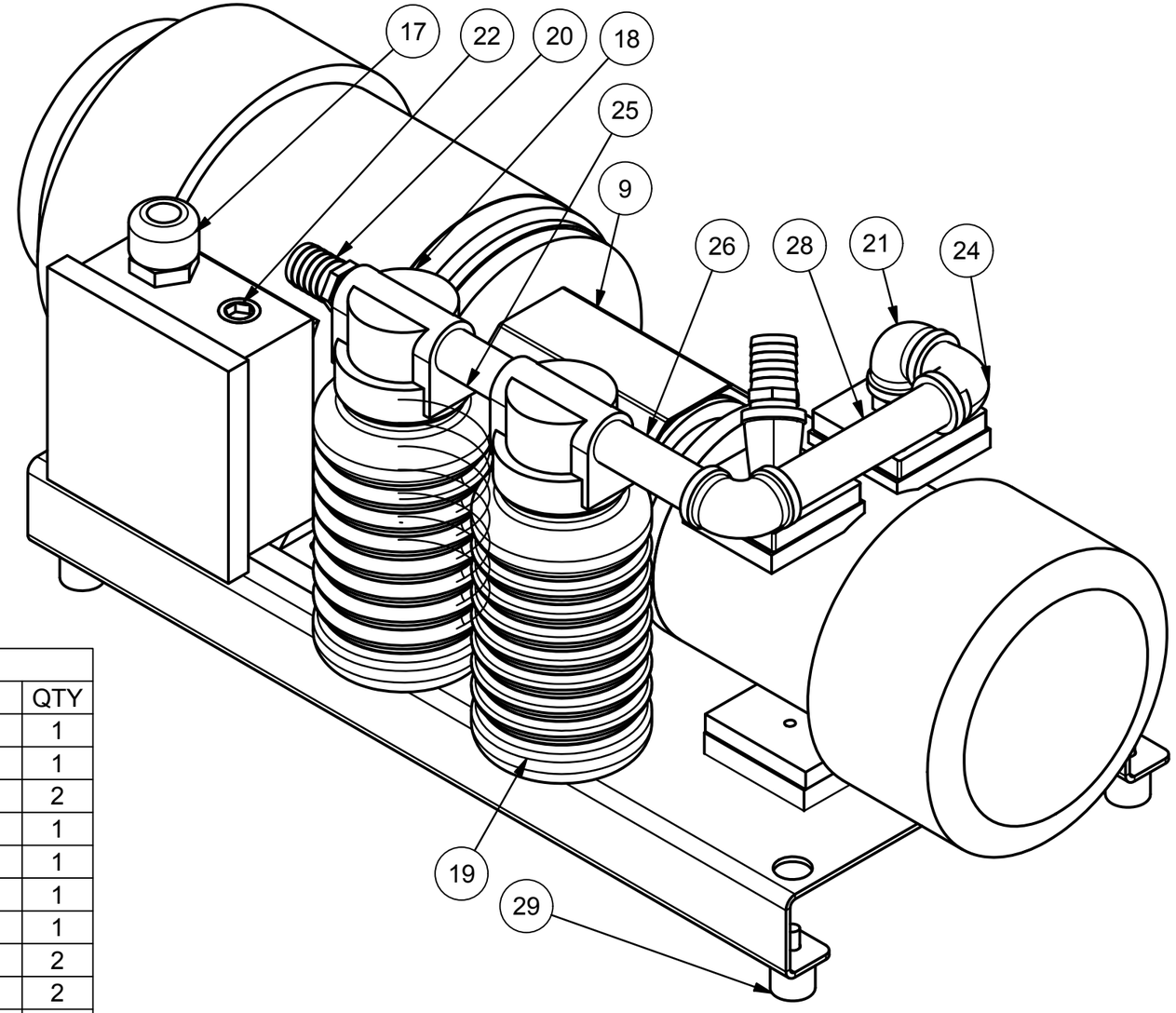
PUMP 40 CFM

DWG NO.: MA250-0003 C

SCALE: 0.32 : 1 DATE: 6/5/2013 SHEET 1 OF 2







CURENT	FUSE F1	FUSE F2	FUSE F3	Motor starter OL settings
208-240 VAC 3 PHASE 50/60HZ	71401701 12 AMP	71401701 12 AMP	71401701 12 AMP	71405401 9.0
440-480 VAC 3 PHASE 60HZ	71401001 6 AMP	71401001 6 AMP	71401001 6 AMP	71405201 5.0

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
2	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK;	1
3	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
9	122071C1	40 CFM PUMP COUPLING COVER	1
15	71404701	MINI CONTACTOR 24VAC	1
16*	71405201	LOVATO OVERLOAD 3.0-5.0 AMP	1
17	71604801	CORD GRIP,.375-.437, 3/4 WOOD	1
18	72106101	FILTER HEAD 3/4 NPT	2
19	72201701	JAR, VACUUM FILTER, RIBBED SIDES, PLASTIC	2
21	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	2
22	74302001	3/4 PLUG, HEX COUNTERSUNK	1
24	74304201	3/4 NPT STREET ELBOW, CAST	1
25	74305001	3/4 NPT X 3 LONG NIPPLE, BRASS	1
26	74305101	3/4 NPT X 4 LONG NIPPLE, BRASS	1
28	74307101	3/4 x 6" NIPPLE	1
29	75001902	VIBRATION ISOLATION PAD	5
30*	71401001	Fuse 6 amp type aM	3

* REPLACE WITH PART# FOR VOLTAGE

CV·TEK

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

APPROVED MFG: APPROVED ENG:

DRAWN BY: T.L.

TITLE: PUMP 40 CFM

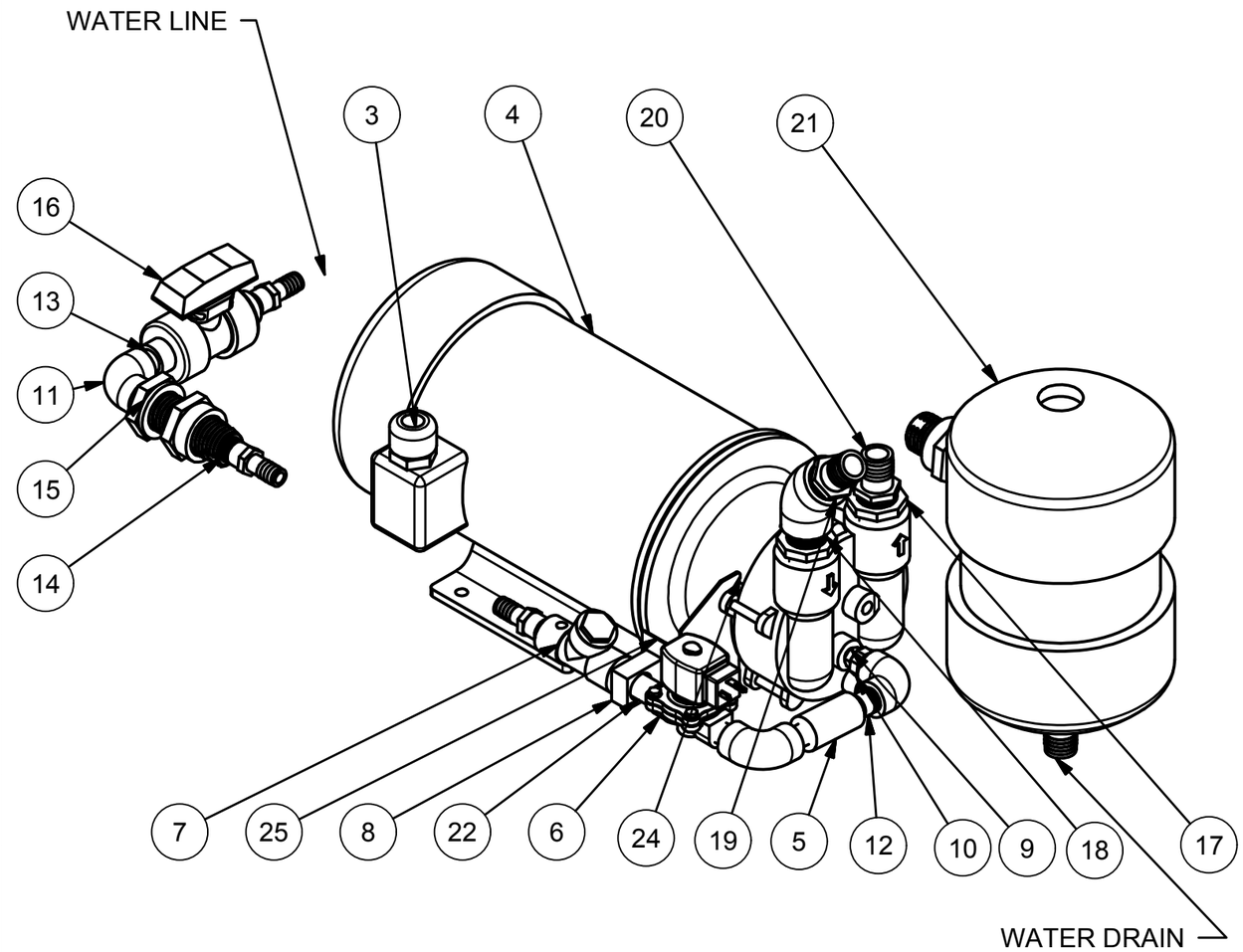
DWG NO.: MA250-0003 C

SCALE: 0.32 : 1 DATE: 6/5/2013 SHEET 2 OF 2

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
3	71604801	CORD GRIP,.375-.437, 3/4 WOOD	1
4	72111401	WATER RING PUMP 60	1
5	73107301	1/2 NPT, .75 GPM, EPR Seal, PVC Flow Control Valve	1
6	73107501	Valve, 1/2 NPT brass N.C. 24VAC w/ DIN	1
7	74000101	PVC Y-Strainer 1/2 NPT Pipe 150 psi	1
8	74000301	Locking Nylon Pipe Hanger 3/4 to 7/8 O.D. Pipe, 9/16 High X 1 Inch Wide	1
9	74303701	1/4 NPT hex nipple - long	1
10	74500101	1/2 NPT Male X 1/4 NPT Female Reducing Hex Bushing Schedule 80, Dark Gray PVC	1
11	74500201	1/2 NPT Female X 1/2 NPT Female 90 Degree Elbow Schedule 80 Dark Gray PVC	3
12	74500301	1/2 NPT X 1/2 NPT X 2 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
13	74500401	1/2 NPT X 1/2 NPT X 1-1/8 INCH LONG THREADED PIPE NIPPLE SCHEDULE 80 DARK GREY PVC	4
14	74500601	Adapter 1/2 Inch Barbed (.635 O.D.) X 1/2 NPT Male Schedule 80 Dark Gray PVC	3
15	74500701	1/2 NPT Female Bulkhead Fitting 1/2 NPT Female X 1/2 NPT Female Gray PVC 1-3/8 Inch Hole Required	2
16	74500801	1/2 NPT Female Ball Valve Schedule 80 Gray CPVC Vito O-Rings	1
17	74500901	1-1/4 NPT Male X 1 NPT Female Reducing Hex Bushing Schedule 80 Dark Gray PVC	2
18	74501001	1 NPT X 1 NPT X 1-1/2 Threaded Pipe Close Nipple Schedule 80 Dark Gray PVC	1
19	74501101	1 NPT Female X 1 NPT Female 45 Degree Elbow Schedule 80 Dark Gray PVC	1
20	74501201	1 Inch Barbed X 1 NPT Male Adapter Schedule 80 Dark Gray PVC	3
21	74501801	Water and Air Separator Weldment (PVC)	1
22	74501901	1/2 NPT X 1/2 NPT X 3 Inch Long Threaded Pipe Nipple Schedule 80 Dark Gray PVC	1
24	76000401	PIPE HANGER SUPPORT BRACKET FOR LEM60 WATER-RING PUMP	1
25	76000701	Pipe Hanger Mounting Bracket LEM60 Water-Ring Pump	1
26	84400101	1 Inch NPT Close 304/304L Stainless Steel Pipe Nipple, 1-1/2 Inch Long Schedule 40 Close	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	02/22/2016	N.B



M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

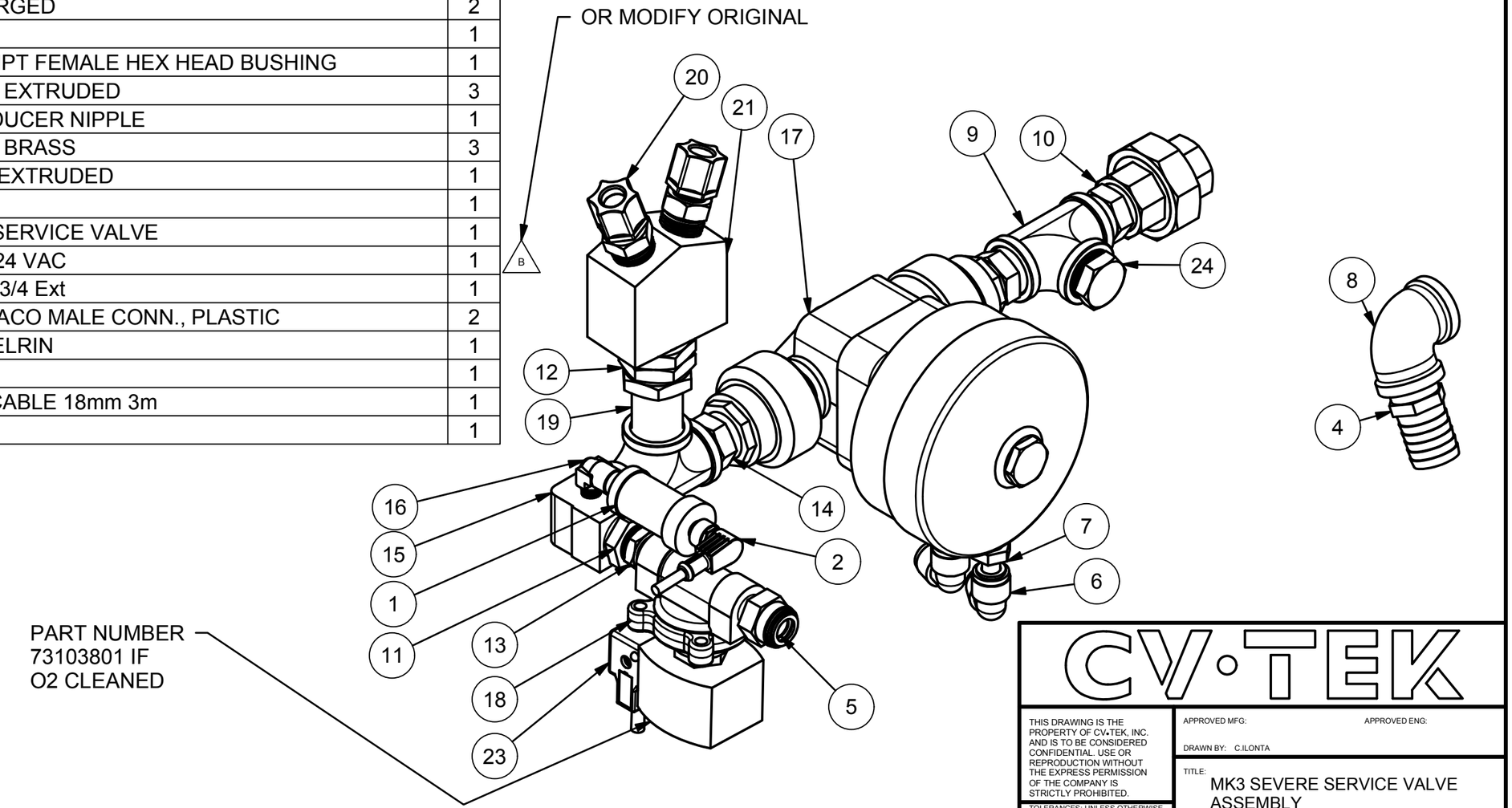
TITLE: WATER RING PUMP, MK III

DWG NO.: Mk III Water Ring Pump Assembly | A

SCALE: N/A | DATE: 1/14/2016 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	121302C1	ASHCROFT VACUUM SENSOR	1
2	121501C1	M12 5-5 PIN 90DEGREE 1.5METER BLACK CABLE (FOR ASHCROFT)	1
3	125097C1	3/4 BALL VALVE HANDLE	1
4	74103301	1 X 3/4 NPT MALE HOSE BARB	1
5	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
6	74203801	3/8 O.D. TUBE, UNION ELBOW	2
7	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	2
8	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	2
9	74300901	3/4 NPT FEM TEE FORGED	2
10	74301501	3/4 UNION, CAST	1
11	74302401	3/4 NPT MALE X 1/2 NPT FEMALE HEX HEAD BUSHING	1
12	74303001	3/4 LOCKNUT BRASS EXTRUDED	3
13	74303601	1/2M X 3/8M HEX REDUCER NIPPLE	1
14	74304101	3/4 NPT HEX NIPPLE, BRASS	3
15	74304601	3/4 STREET ELBOW, EXTRUDED	1
16	74304801	1/8 STREET ELBOW	1
17	73108001	CHEMLINE SEVERE SERVICE VALVE	1
18	73103701	3/8 NPT BRASS N.C. 24 VAC	1
19	74309201	3/4 X 3-1/2 Nipple w/1-3/4 Ext	1
20	74200601	1/2 TUBE X 1/2 NPT JACO MALE CONN., PLASTIC	2
21	79200101A	VACUUM Y WHITE DELRIN	1
22	71601101	3/4 SEAL RING	1
23	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
24	74302101	3/4 plug, hex head	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/27/2018	N.B
B	ITEM 73103701 WAS P/N 73102201	2/27/2023	MS
C	ADDED/REMOVED ITEMS TO MATCH INFOR	11/15/2024	GW



PART NUMBER
73103801 IF
O2 CLEANED

CV·TEK

APPROVED MFG: APPROVED ENG:

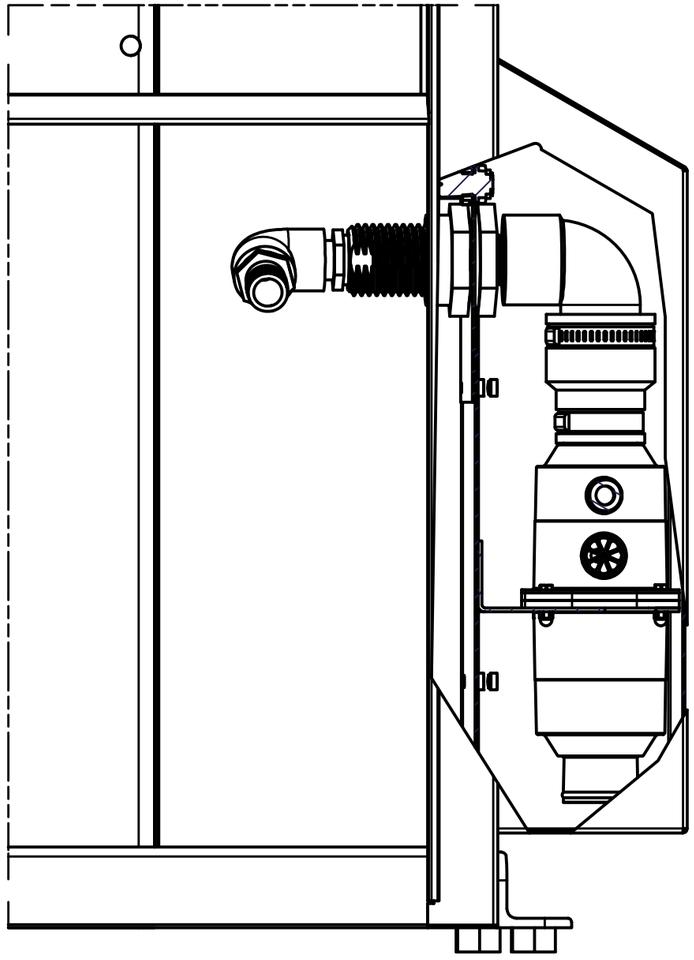
DRAWN BY: C.ILONTA

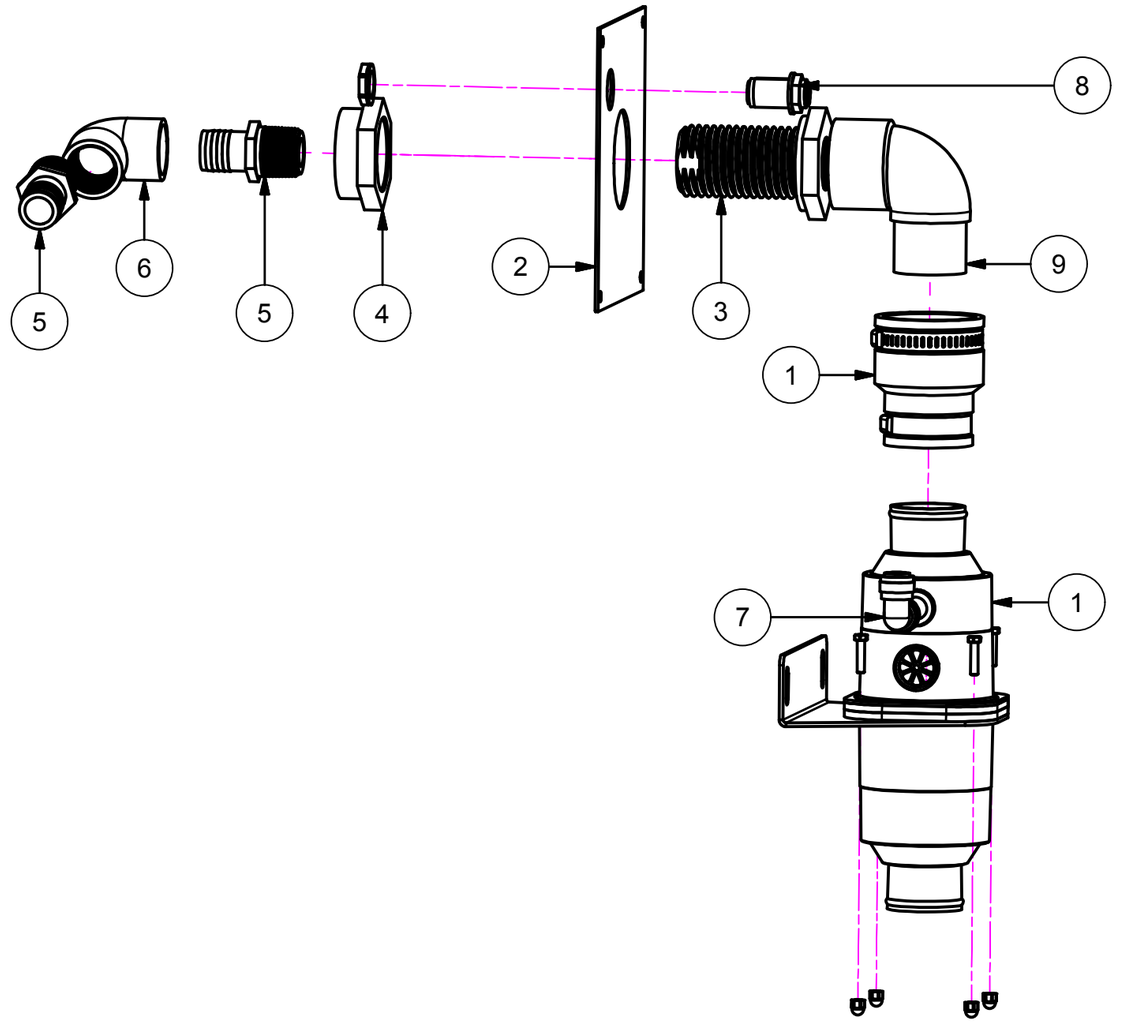
TITLE: MK3 SEVERE SERVICE VALVE ASSEMBLY

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA251-0001 C

SCALE: N/A DATE: SHEET 1 OF 1





PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QT
1	122904C1	Pump, Vacuum, Round Coax Cartridge Style	1
2	123248C1	PIAB ADAPTER PLATE	1
3	74501301 body	1 NPT X 1 NPT Female Bulkhead Fitting Gray PVC, 1-7/8 Inch Hole Diameter Required	1
4	74501301 Nut	1 NPT X 1 NPT Female Bulkhead Fitting Gray PVC, 1-7/8 Inch Hole Diameter Required	1
5	74501201	1 Inch Barbed X 1 NPT Male Adapter Schedule 80 Dark Gray PVC	2
6	121178C1	Thick-Wall Dark Gray PVC Threaded Pipe Fitting, 1 Pipe Size, 90 Degree Elbow, Schedule 80	1
7	74203901	1/2 O.D. TUBE UNION EBOW, PLASTIC	1
8	110507C1	3/8 O.D. TUBE, BULK HEA UNION	1
9	121898C1	Gray PVC 90 Deg Threaded Elbow, 1-1/4 NPTF, Schedule 80	1

M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: wflower

TITLE:

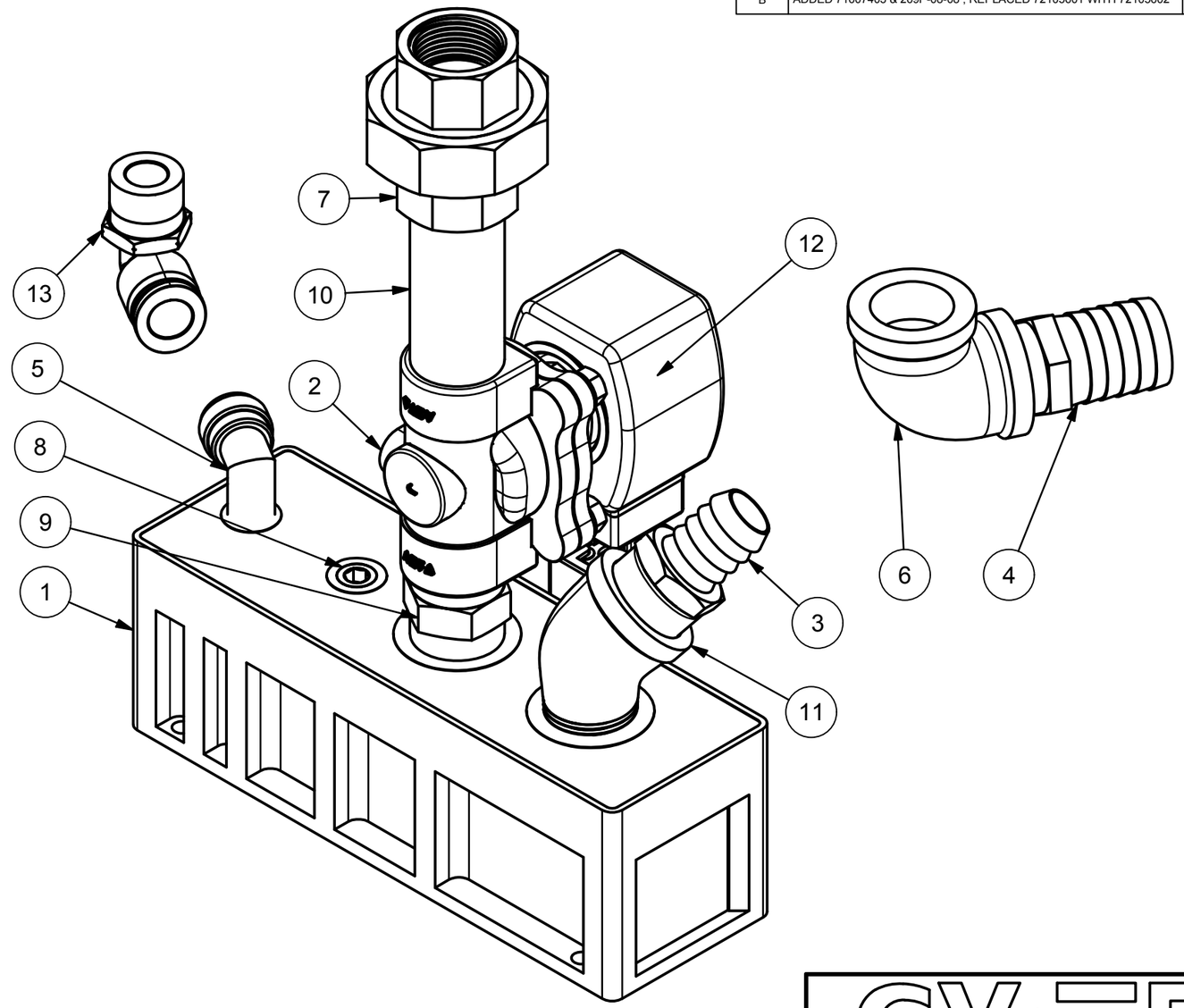
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MARK III PYLON PIAB

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	72105602	PIAB PUMP ALL PLASTIC, AIR DRIVEN, NO FITTINGS	1
2	73102401	ASCO VALVE, 3/4 NPT BRASS N.C. 24 VAC	1
3	74103201	3/4 X 3/4 MALE HOSE BARB	1
4	74103301	1 X 3/4 NPT MALE HOSE BARB	1
5	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	1
6	74300801	3/4 NPT FEMALE ELBOW, CAST BRASS	1
7	74301501	3/4 UNION, CAST	1
8	74301701	1/4 plug, hex countersunk	1
9	74304101	3/4 NPT HEX NIPPLE, BRASS	1
10	74305001	3/4 NPT X 3 LONG NIPPLE, BRASS	1
11	74305501	3/4 NPT STREET ELBOW, 45 DEG., FORGED BRASS	1
12	71607403	ASCO VALVE PLUG CABLE 18mm 3m	1
13	269P-08-08	FITTING.ELB.1/2 NPT TO 1/2 OD	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	06/06/2018	CI
B	ADDED 71607403 & 269P-08-08 , REPLACED 72105601 WITH 72105602	11/15/24	RB



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE:

MK3 AIR DRIVEN PUMP

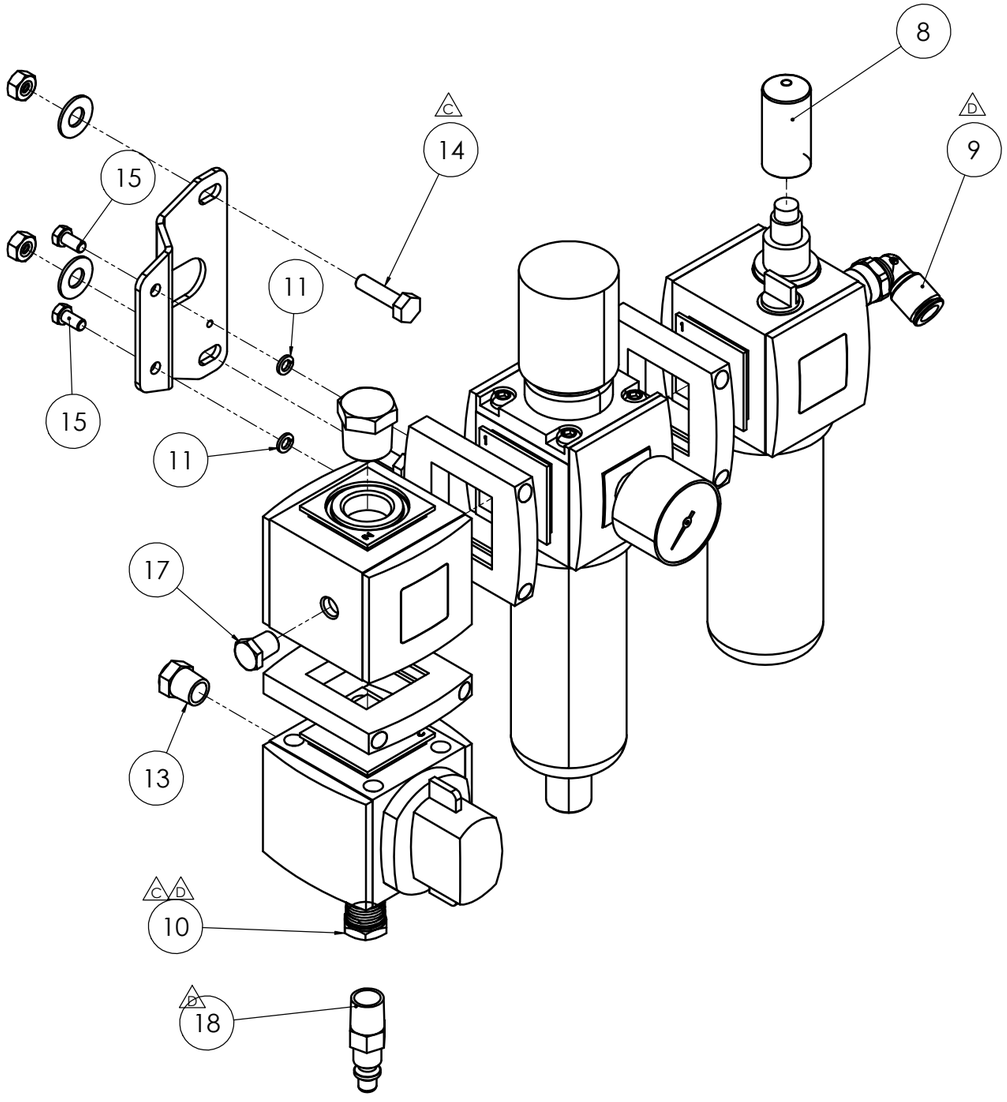
DWG NO.: MA250-0015 B

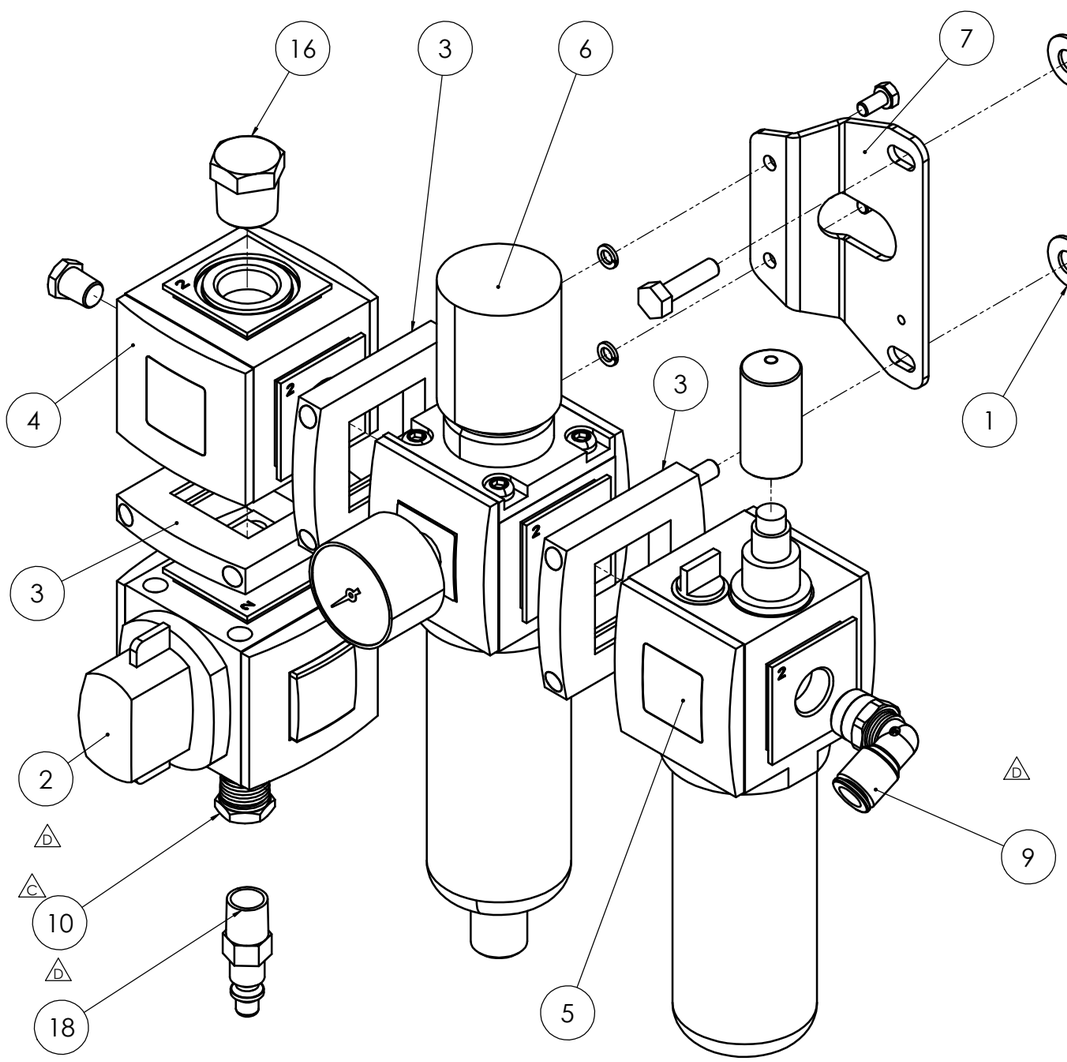
SCALE: N/A | DATE: | SHEET 1 OF 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	110555C1	WASHER, FLAT	2
2	129505C1	SHUTOFF	1
3	129511C1	BODY TO BODY CONNECTOR	3
4	129513C1	AVENTICS DIVERTER BLOCK	1
5	129514C1	AVENTICS LUBRICATOR	1
6	129534C1	L2R FILTER REGULATOR	1
7	129562C1	MK3 FRL MOUNT	1
8	129771C1	LUBRICATOR VINYL CAP	1
9	269P-06-06	ELBOW MALE BRASS	1
10	74302201	3/8M X 1/4F HEX BUSHING	1
11	75102501	WASHER, LOCK	2
12	75109701	1/4-20; Sealing nut	2
13	ASP-2BV	VENT	1
14	HH1/4-20X1	SCREW, HEX HEAD	2
15	HHM5X0.8X10	SCREW,HEX METRIC	2
16	SP1/2NPT	SP1/2NPT	1
17	SP1/8NPT	SP1/8NPT	1
18	NPBAA1/4IDX1/4NPT	NICKEL PLATED BRASS AIR ADAPTER	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
D	ADDED ARE MALE ELBOW 269-06-06, AIR ADAPTER 1/4NPT AND PIPE REDUCER FITTING 3/8NPT M X 1/4NPT F	1/11/2023	SP
C	CHANGED PART NUMBER OF PIPE REDUCER FITTING 3/8NPT M X 1/4NPT F TO 74302201, HBOLT 0.2500-20x1x0.75-N TO HH1/4-20X1	1/19/2023	PV
D	REPLACED NPBAA1/4IDX1/4NPT WITH SAA1/4X1/4NPT	11/22/24	RB

-0 PLUG



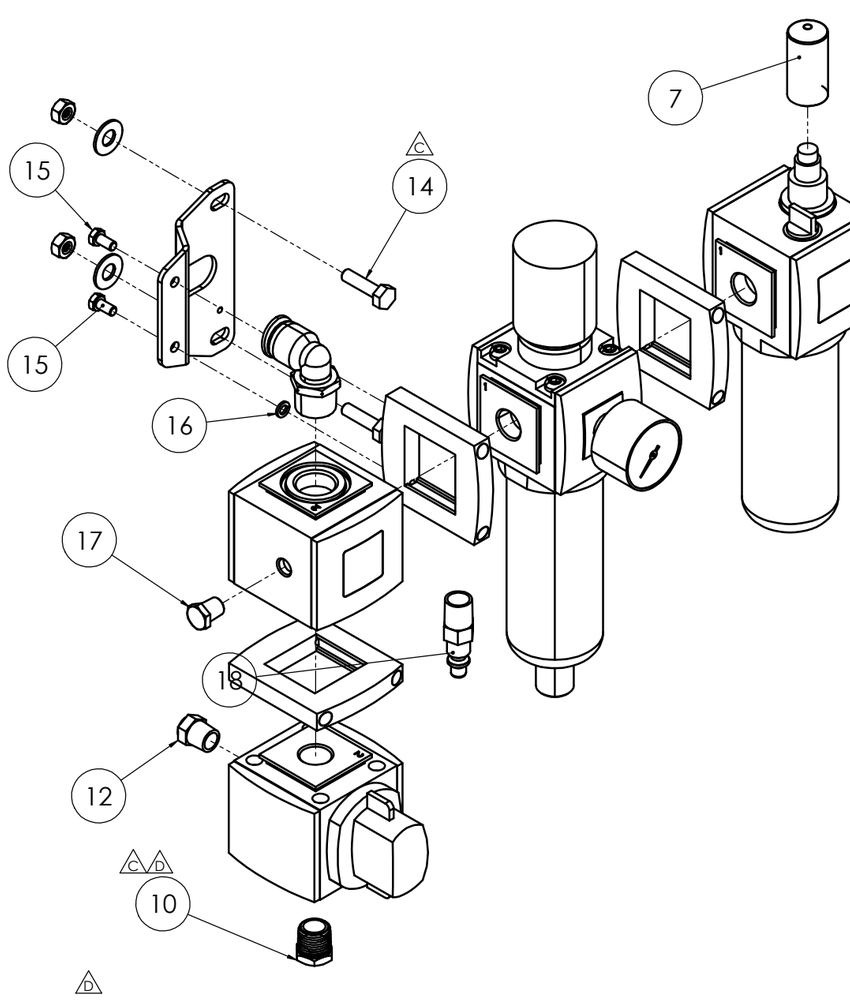


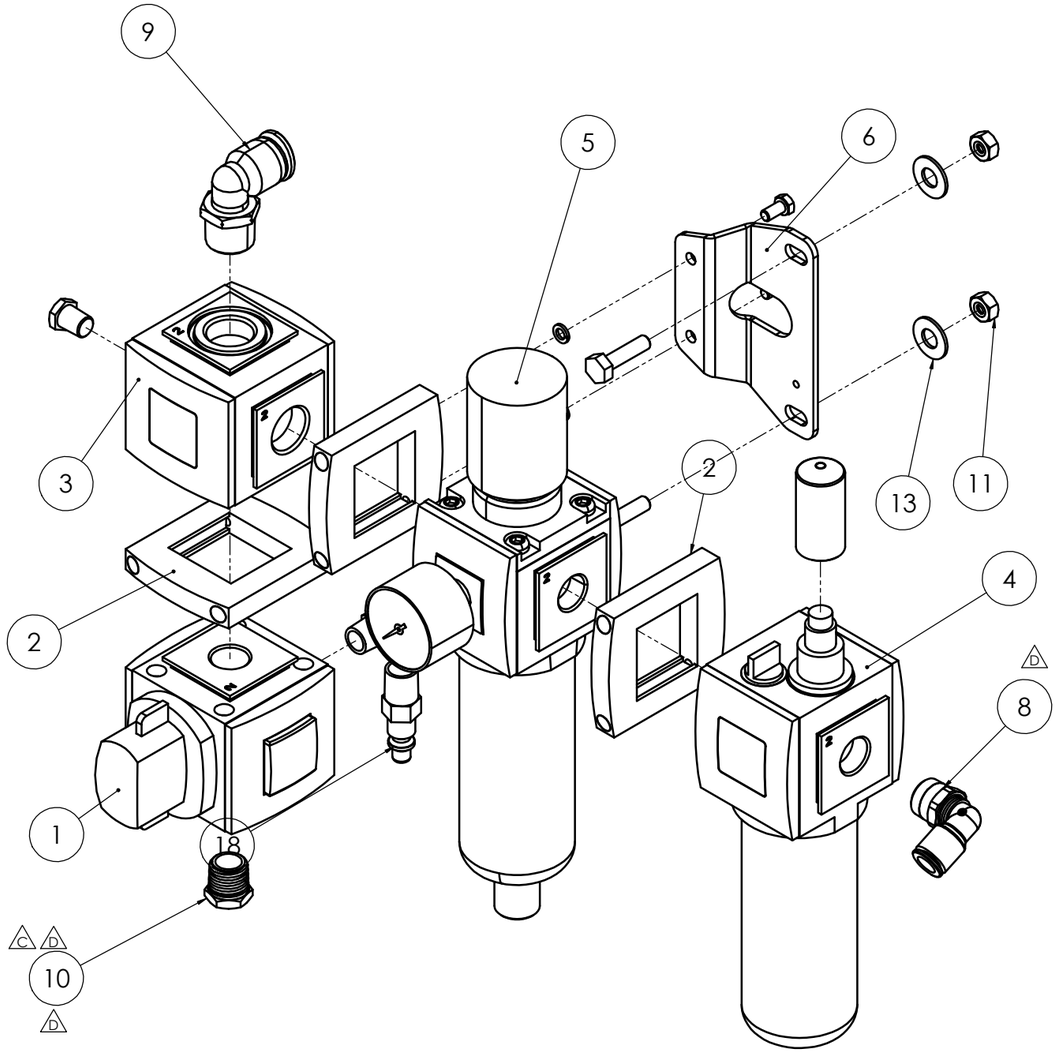
MATERIAL: - STOCK NO: - STOCK SIZE: - MASS [LBS]: -	CV·TEK 1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: 847.741.3500 FAX: 847.741.3569			MARK 3 / MAPVAC FRL ASSEMBLY
FINISH -	**PROPRIETARY AND CONFIDENTIAL** THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.			DRAWING NO. 129809C1 / REV C
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.	DRAWN AK	DATE 6/29/2021	SCALE 1:1	SHEET 1 OF 2

129809C1 REV-C

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	129505C1	SHUTOFF	1
2	129511C1	BODY TO BODY CONNECTOR	3
3	129513C1	AVENTICS DIVERTER BLOCK	1
4	129514C1	AVENTICS LUBRICATOR	1
5	129534C1	L2R FILTER REGULATOR	1
6	129562C1	MK3 FRL MOUNT	1
7	129771C1	LUBRICATOR VINYL CAP	1
8	269P-06-06	ELBOW MALE BRASS	1
9	269P-08-08	ELBOW MALE BRASS	1
10	74302201	3/8M X 1/4F HEX BUSHING	1
11	75109701	1/4-20; Sealing nut	2
12	ASP-2BV	VENT	1
13	FW5/16-A	WASHER, FLAT	2
14	HH1/4-20X1	SCREW, HEX HEAD	2
15	HHM5X0.8X10	SCREW,HEX METRIC	2
16	LW10	WASHER, LOCK	2
17	SP1/8NPT	SP1/8NPT	1
18	NPBAA1/4IDX1/4NPT	NICKEL PLATED BRASS AIR ADAPTER	1

-1 PIAB PORT



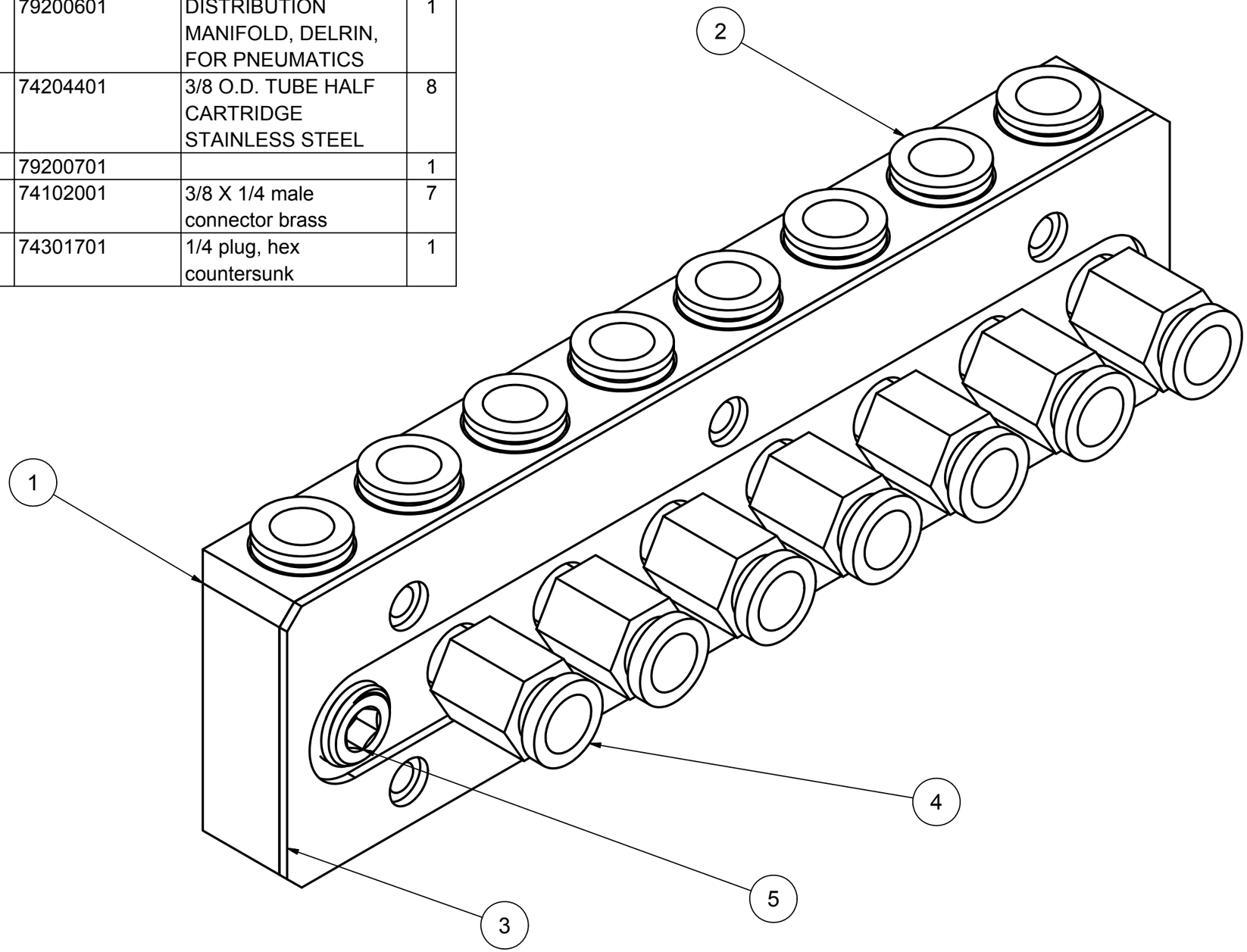


MATERIAL: - STOCK NO: - STOCK SIZE: - MASS [LBS]: -	CV·TEK 1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: 847.741.3500 FAX: 847.741.3569		MARK 3 / MAPVAC FRL ASSEMBLY
FINISH -			
UNLESS OTHERWISE SPECIFIED: **1. BREAK ALL SHARP CORNERS** 2. TOLERANCES: FRACT.=±1/64 .XXX=±.005 .XX=±.015 .XXXX=±.0005 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.		DRAWING NO. 129809C1 / REV C
	DRAWN AK / DATE 6/29/2021	SCALE 4:5 / SHEET 2 OF 2	

129809C1 REV-C

Parts List			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	79200601	DISTRIBUTION MANIFOLD, DELRIN, FOR PNEUMATICS	1
2	74204401	3/8 O.D. TUBE HALF CARTRIDGE STAINLESS STEEL	8
3	79200701		1
4	74102001	3/8 X 1/4 male connector brass	7
5	74301701	1/4 plug, hex countersunk	1

REVISION			
REV	DESCR	DATE	APRVD
1			



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

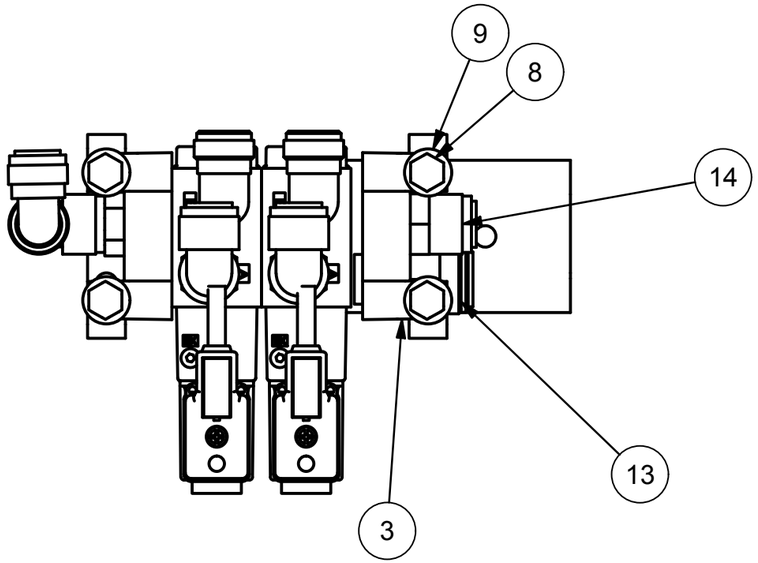
TITLE: Delrin Pneumatic Manifold Assembly With Fittings Mark III/IV

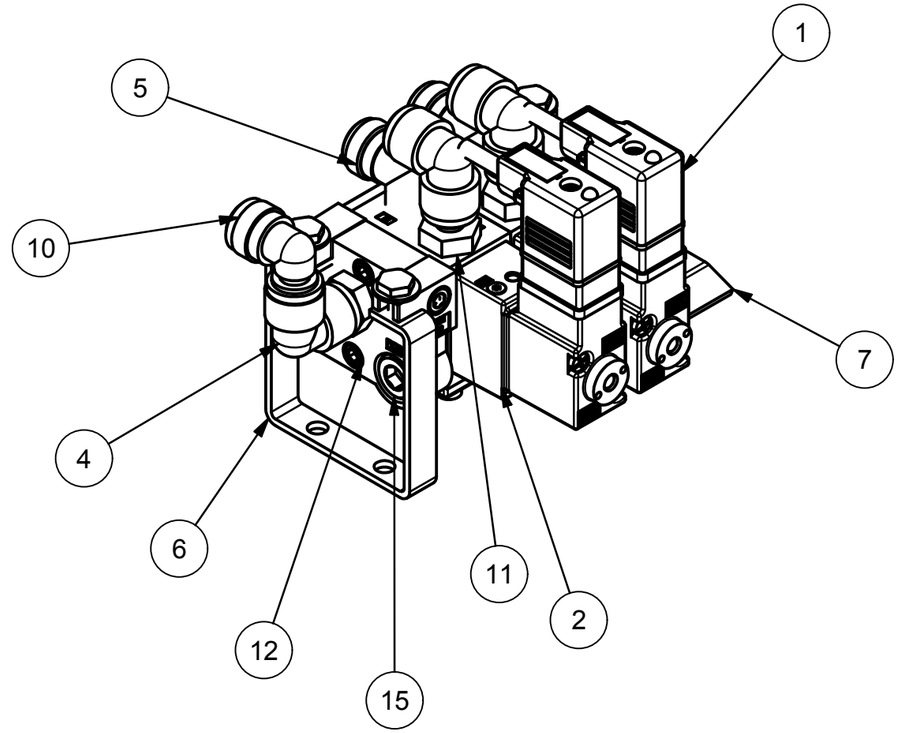
DWG NO.: 69200101 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	71607503	MAC VALVE 11mm CABLE 3M LONG	2
2	73100201	24 vac stacking version with DIN connector	2
3	73101301	713 series stacking valves	1
4	74203801	3/8 O.D. TUBE, UNION ELBOW	3
5	74205201	3/8 OD TUBE x 3/8 NPT MALE FIXED ELBOW, PLASTIC	2
6	76204401A	STAND OFF MAC VALVE	2
7	76204501A	Plate, Mac hold down plate for stand off	1
8	75106601	1/4-28 UNF X 1/2 LG. HHCS	4
9	75103301	1/4 FLAT WASHER S/S	4
10	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
11	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	3
12	74301601	1/8 plug, hex countersunk	6
13	74203101	1/2 OD TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC	1
14	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	1
15	74301801	3/8 PLUG HEX COUNTERSUNK	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/26/2018	N.B
B	CORRECTED ALL NPT FITTINGS, ADDED MOUNT HARDWARE & ADDED 6X 74301601	11/14/24	RB





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

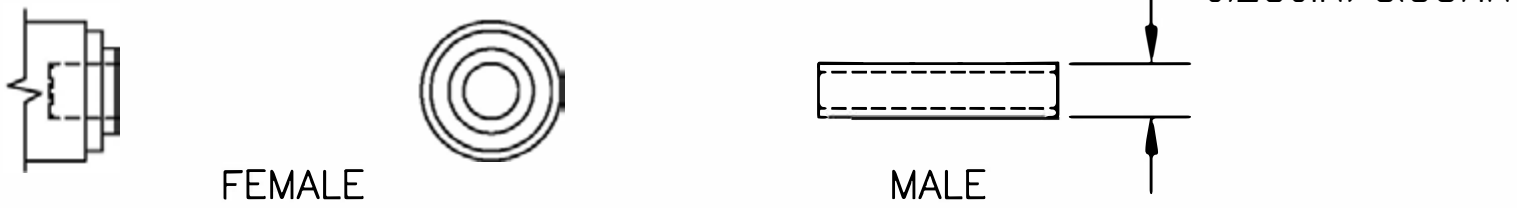
DRAWN BY: TomJr

TITLE: MK3 BASE MAC VALVE ASSEMBLY

DWG NO.: MA020-0090 B

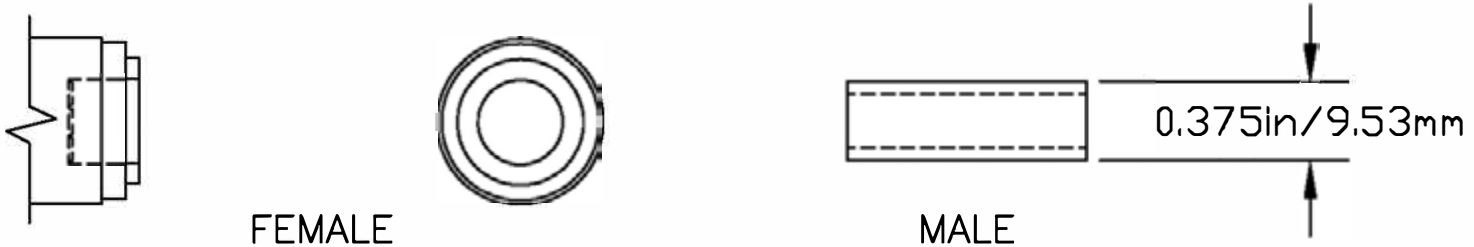
SCALE: N/A DATE: SHEET 1 OF 1

FULL SIZE TUBE CONNECTOR CHART



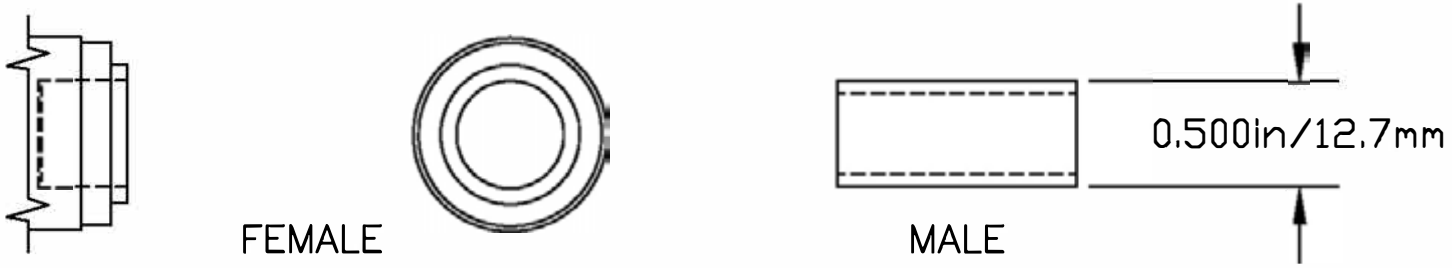
FEMALE MALE

1/4 TUBE CONNECTOR



FEMALE MALE

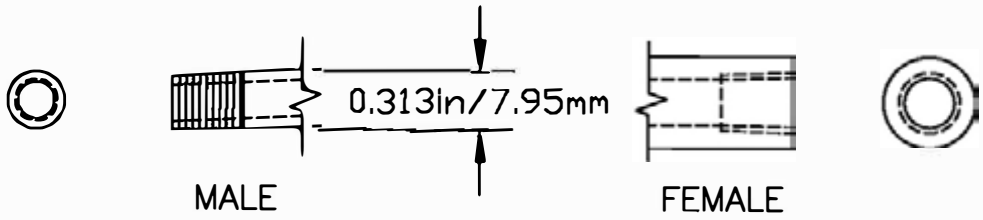
3/8 TUBE CONNECTOR



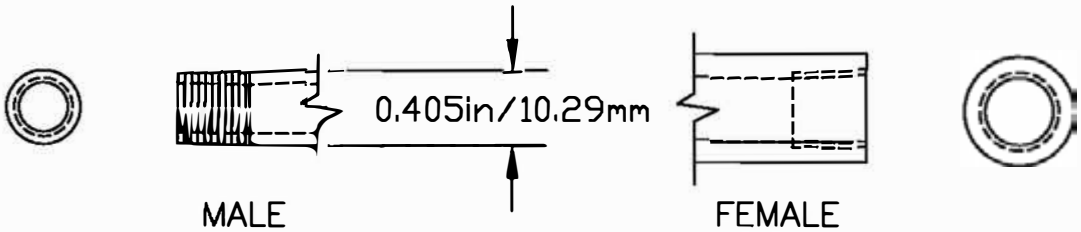
FEMALE MALE

1/2 TUBE CONNECTOR

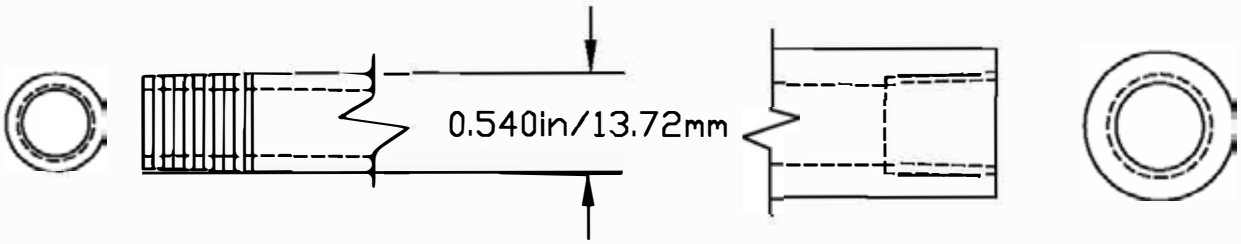
FULL SIZE PIPE THREAD CHART



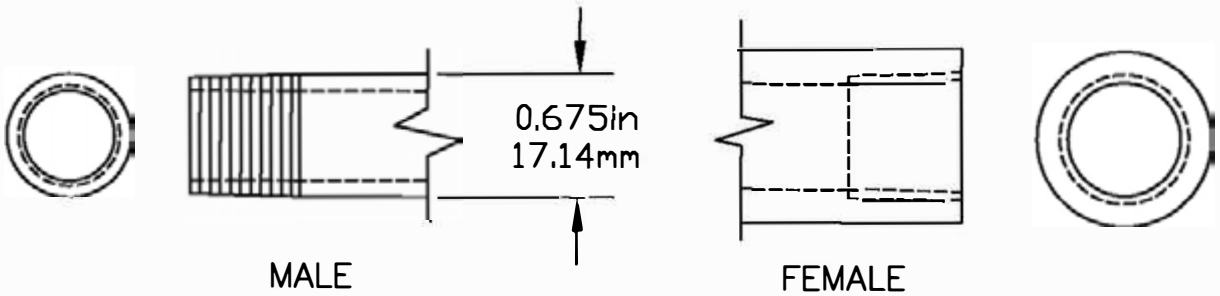
1/16 NPT TAPERED PIPE THREAD



1/8 NPT TAPERED PIPE THREAD

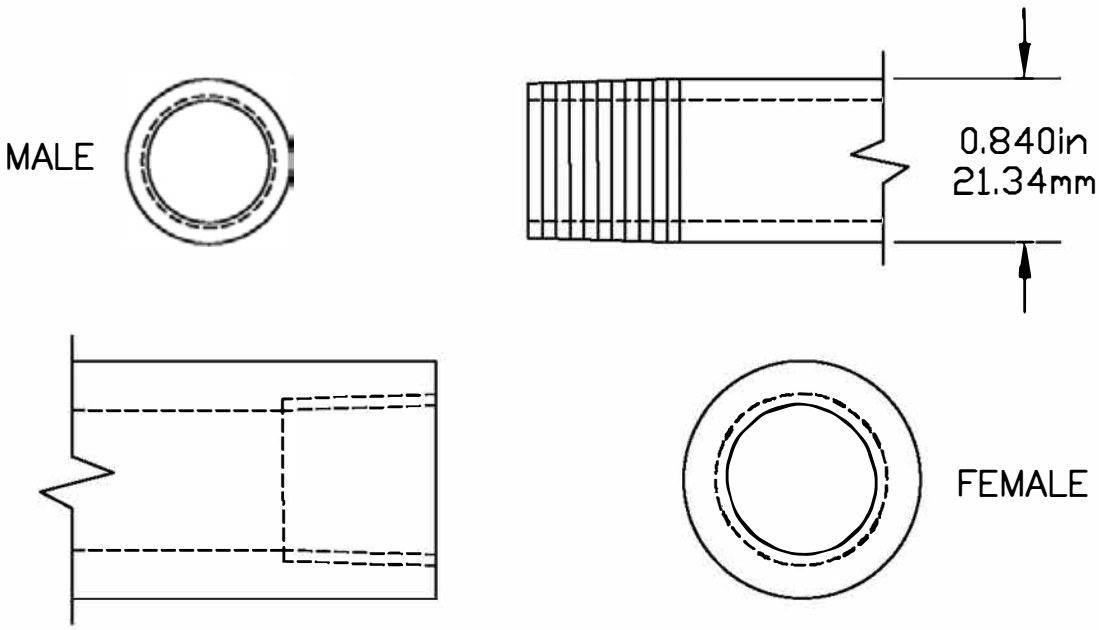


1/4 NPT TAPERED PIPE THREAD

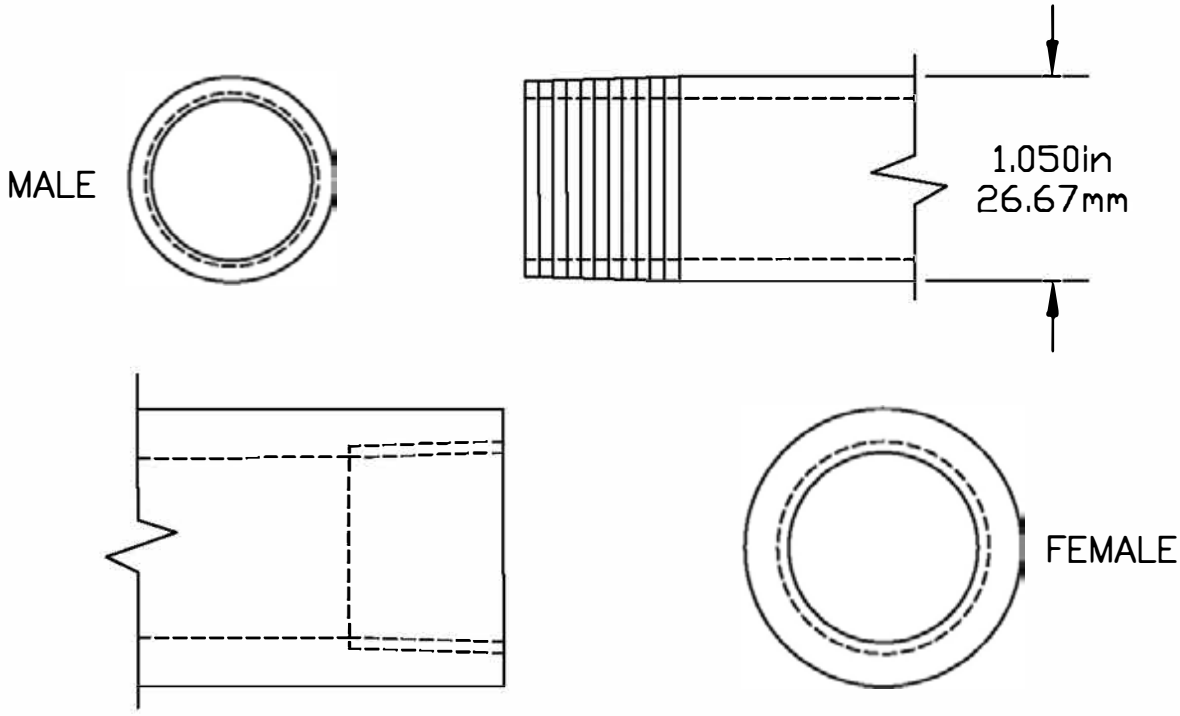


3/8 NPT TAPERED PIPE THREAD

FULL SIZE PIPE THREAD CHART

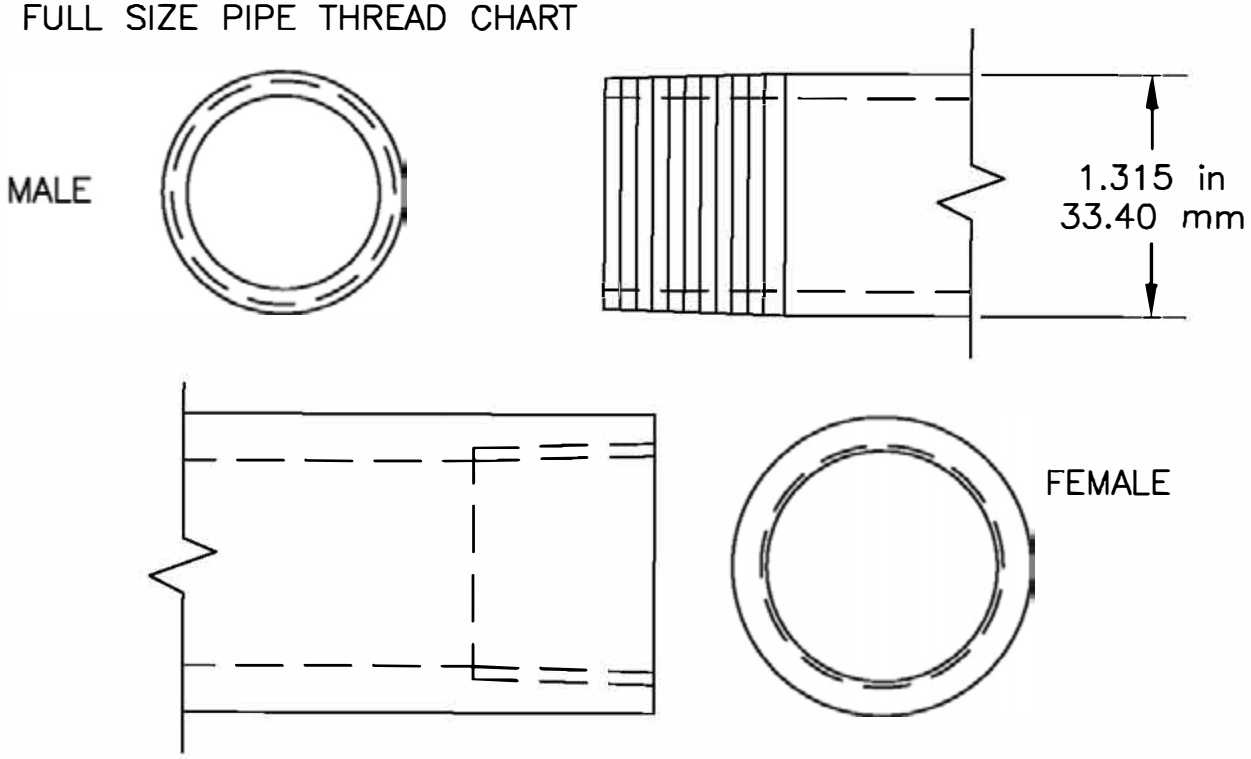


1/2 NPT TAPERED PIPE THREAD

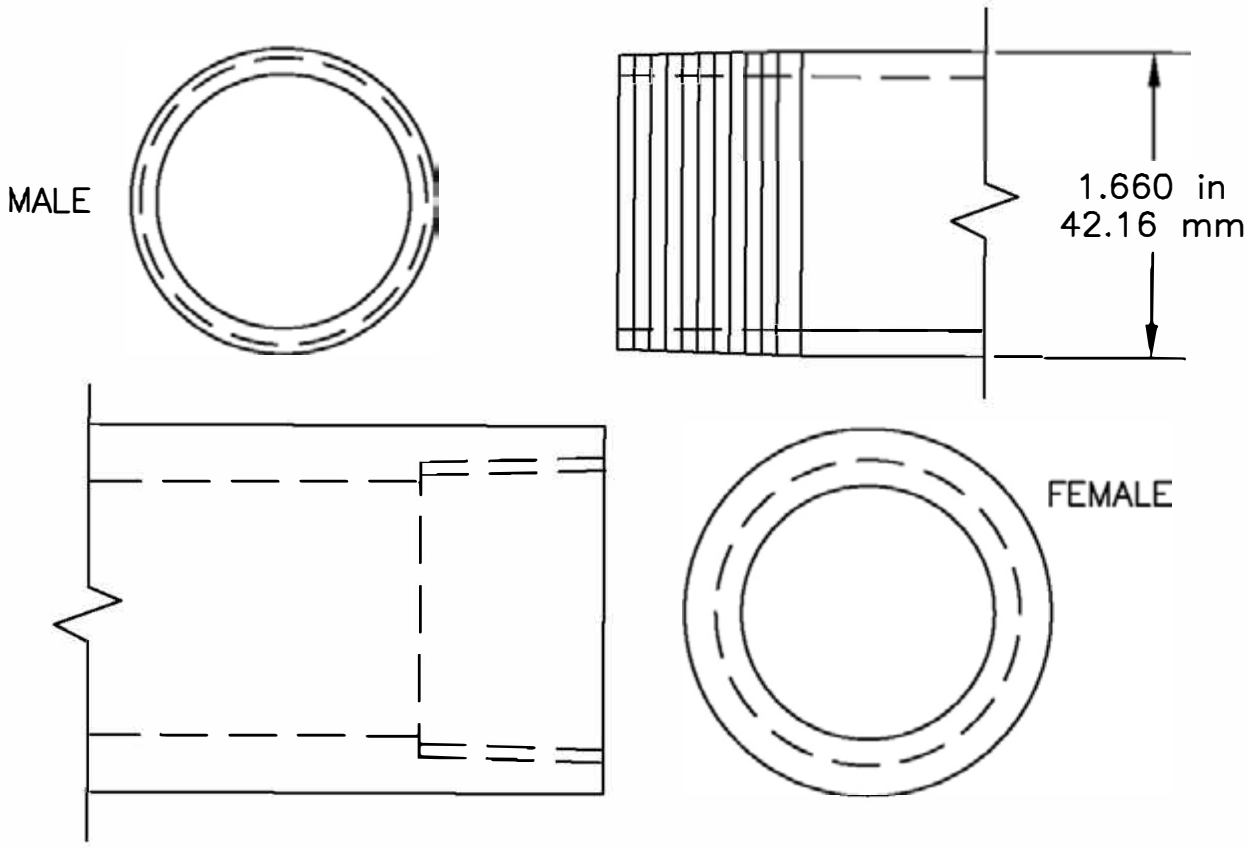


3/4 NPT TAPERED PIPE THREAD

FULL SIZE PIPE THREAD CHART



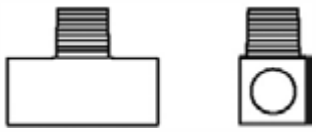
1 NPT TAPERED PIPE THREAD



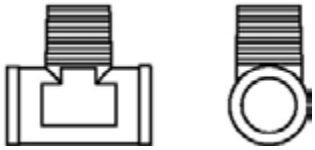
1 1/4 NPT TAPERED PIPE THREAD

FITTINGS, METAL TEES

74306301	1/4 NPT MALE BRANCH TEE, BRASS
74306401	3/8 NPT MALE BRANCH TEE, BRASS
74306601	3/4 NPT MALE BRANCH TEE, BRASS



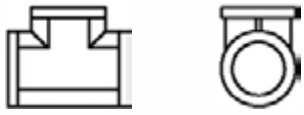
74306501	1/2 NPT MALE BRANCH TEE, BRASS



74305901	1/4 NPT MALE RUN TEE, BRASS
74306001	3/8 NPT MALE RUN TEE, BRASS

74306101	1/2 NPT MALE RUN TEE, BRASS
74306201	3/4 NPT MALE RUN TEE, BRASS

74400501	1/4 NPT FEMALE TEE, STAINLESS STEEL
74300901	3/4 NPT FEMALE TEE, BRASS



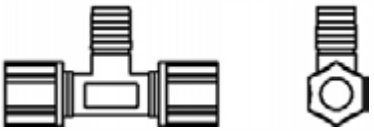
74103401	3/8 TUBE UNION TEE, BRASS
74102201	1/2 TUBE UNION TEE, BRASS

74102801	1/4 TUBE X 1/8 NPT MALE RUN TEE, SWIVEL, BRASS
74102901	3/8 TUBE X 1/4 NPT MALE RUN TEE, SWIVEL, BRASS

74100701	3/8 TUBE UNION TEE, BRASS

FITTINGS, PLASTIC TEES

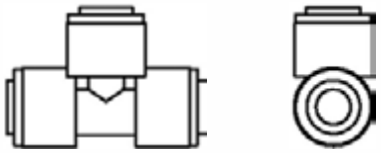
74202101	3/8 TUBE X 1/4 NPT MALE BRANCH TEE, PLASTIC
74202201	1/2 TUBE X 3/8 NPT MALE BRANCH TEE, PLASTIC



74202501	3/8 TUBE X 1/4 NPT MALE RUN TEE, PLASTIC
74202601	1/2 TUBE X 3/8 NPT MALE RUN TEE, PLASTIC

74202301	3/8 TUBE UNION TEE, PLASTIC
74202401	1/2 TUBE UNION TEE, PLASTIC

74203401	1/4 TUBE UNION TEE, PLASTIC
74203501	3/8 TUBE UNION TEE, PLASTIC
74203601	1/2 TUBE UNION TEE, PLASTIC



FITTINGS, METAL ELBOWS

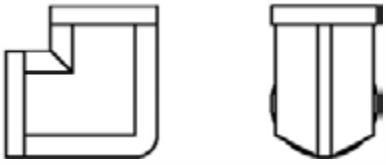
74304301	1/8 NPT STREET ELBOW, BRASS
74304601	3/4 NPT STREET ELBOW, BRASS

74304401	1/4 NPT STREET ELBOW, LONG, BRASS
74304501	3/8 NPT STREET ELBOW, LONG, BRASS

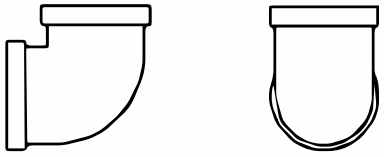
74307301	1/4 NPT FEMALE X 3/8 NPT MALE STREET ELBOW, BRASS
74304701	1/2 NPT FEMALE X 3/8 NPT MALE STREET ELBOW, BRASS

74304801	1/8 NPT STREET ELBOW, HEAVY, BRASS

74300601	1/4 NPT FEMALE ELBOW, BRASS
74300701	3/4 NPT FEMALE ELBOW, BRASS



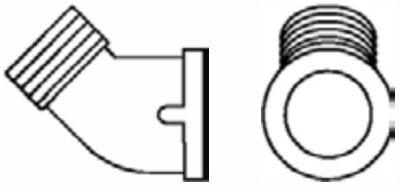
74300801	3/4 NPT FEMALE ELBOW, BRASS



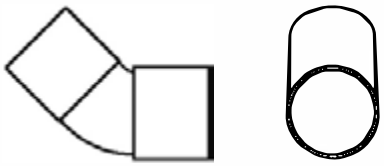
74306701	1/8 NPT STREET ELBOW, 45°, BRASS
74305801	1/4 NPT STREET ELBOW, 45°, BRASS
74307201	1/2 NPT STREET ELBOW, 45°, BRASS

FITTINGS, METAL ELBOWS

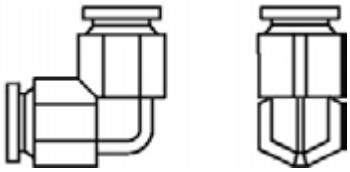
74305501 3/4 NPT STREET ELBOW, 45°, BRASS



74400101 1" TUBE 45° ELBOW, COPPER



74102301 1/2 TUBE UNION ELBOW, BRASS



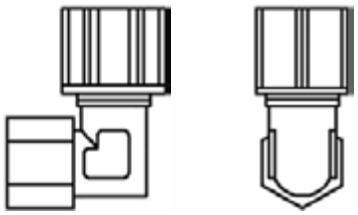
74102601 1/4 TUBE X 1/8 NPT MALE ELBOW, BRASS
74102701 3/8 TUBE X 1/4 NPT MALE ELBOW, BRASS
74103601 3/8 TUBE X 3/8 NPT MALE ELBOW, BRASS
74103001 1/2 TUBE X 3/8 NPT MALE ELBOW, BRASS

74102501 1/4 TUBE X 1/8 NPT MALE ELBOW, SWIVEL, BRASS

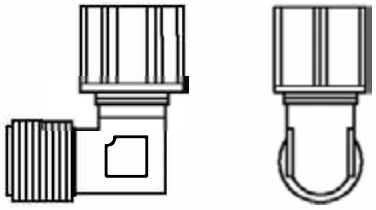
74100801 3/8 TUBE X 1/4 NPT MALE ELBOW, BRASS
74100901 3/8 TUBE X 3/8 NPT MALE ELBOW, BRASS

FITTINGS, PLASTIC ELBOWS

74201901	3/8 TUBE X 3/8 NPT FEMALE ELBOW, PLASTIC
74202001	1/2 TUBE X 3/8 NPT FEMALE ELBOW, PLASTIC



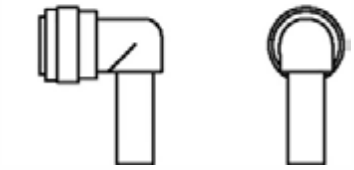
74201501	3/8 TUBE X 1/4 NPT MALE ELBOW, PLASTIC
74201601	3/8 TUBE X 3/8 NPT MALE ELBOW, PLASTIC
74201701	1/2 TUBE X 3/8 NPT MALE ELBOW, PLASTIC
74201801	1/2 TUBE X 1/2 NPT MALE ELBOW, PLASTIC



74203701	1/4 TUBE UNION ELBOW, PLASTIC
74203801	3/8 TUBE UNION ELBOW, PLASTIC
74203901	1/2 TUBE UNION ELBOW, PLASTIC

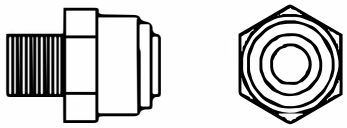
74204101	1/4 TUBE X 1/8 NPT FIXED ELBOW MALE, PLASTIC
74204201	3/8 TUBE X 1/4 NPT FIXED ELBOW MALE, PLASTIC

74204001	3/8 TUBE X 3/8 PLUG IN ELBOW, PLASTIC

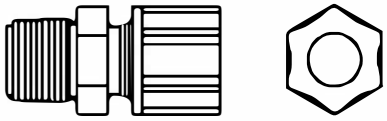


FITTINGS, PLASTIC CONNECTORS

74202701	1/4 TUBE X 1/8 NPT MALE CONNECTOR, PLASTIC
74202801	1/4 TUBE X 1/4 NPT MALE CONNECTOR, PLASTIC
74202901	3/8 TUBE X 1/8 NPT MALE CONNECTOR, PLASTIC
74203001	3/8 TUBE X 1/4 NPT MALE CONNECTOR, PLASTIC
74203101	1/2 TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC
74203201	3/8 TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC



74200201	1/4 TUBE X 1/4 NPT MALE CONNECTOR, PLASTIC
74200301	3/8 TUBE X 1/4 NPT MALE CONNECTOR, PLASTIC
74200401	3/8 TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC
74200501	1/2 TUBE X 3/8 NPT MALE CONNECTOR, PLASTIC
74200601	1/2 TUBE X 1/2 NPT MALE CONNECTOR, PLASTIC

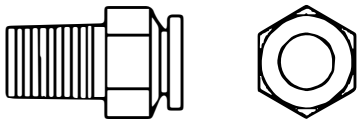


74204301	3/8 TUBE X 1/4 NPT FEMALE CONNECTOR, PLASTIC

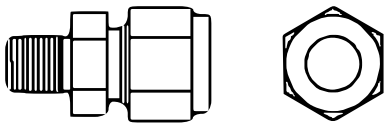
74201201	3/8 TUBE X 1/4 NPT FEMALE CONNECTOR, PLASTIC
74201301	3/8 TUBE X 3/8 NPT FEMALE CONNECTOR, PLASTIC
74201401	1/2 TUBE X 3/8 NPT FEMALE CONNECTOR, PLASTIC

FITTINGS, METAL CONNECTORS

74101701	1/4 TUBE X 1/8 NPT MALE CONNECTOR, BRASS
74102401	1/4 TUBE X 1/4 NPT MALE CONNECTOR, BRASS
74101901	3/8 TUBE X 1/8 NPT MALE CONNECTOR, BRASS
74102001	3/8 TUBE X 1/4 NPT MALE CONNECTOR, BRASS
74102101	1/2 TUBE X 3/8 NPT MALE CONNECTOR, BRASS

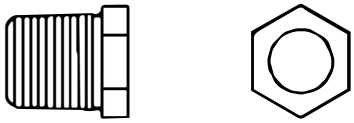


74100201	3/8 TUBE X 1/8 NPT MALE COMPRESSION, BRASS
74100301	3/8 TUBE X 1/4 NPT MALE COMPRESSION, BRASS
74100401	3/8 TUBE X 3/8 NPT MALE COMPRESSION, BRASS
74100501	1/2 TUBE X 3/8 NPT MALE COMPRESSION, BRASS
74100601	1/2 TUBE X 1/2 NPT MALE COMPRESSION, BRASS



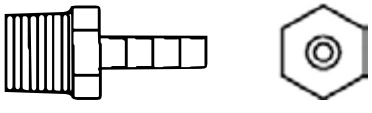
FITTINGS, METAL BUSHINGS

74302501	1/4 NPT MALE X 1/8 NPT FEMALE HEX HEAD BUSHING, BRASS
74301001	3/8 NPT MALE X 1/8 NPT FEMALE HEX HEAD BUSHING, BRASS
74302201	3/8 NPT MALE X 1/4 NPT FEMALE HEX HEAD BUSHING, BRASS
74307801	1/2 NPT MALE X 1/4 NPT FEMALE HEX HEAD BUSHING, BRASS
74302301	1/2 NPT MALE X 3/8 NPT FEMALE HEX HEAD BUSHING, BRASS
74302601	3/4 NPT MALE X 3/8 NPT FEMALE HEX HEAD BUSHING, BRASS
74302401	3/4 NPT MALE X 1/2 NPT FEMALE HEX HEAD BUSHING, BRASS
74302701	1 NPT MALE X 3/4 NPT FEMALE HEX HEAD BUSHING, BRASS
74303801	1 1/4 NPT MALE X 3/4 NPT FEMALE HEX HEAD BUSHING, BRASS



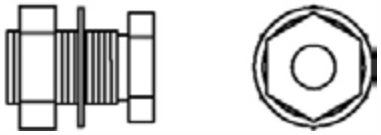
FITTINGS, METAL HOSE BARBS

74101101	3/16 HOSE ID X 1/4 NPT MALE HOSE BARB, BRASS
74101201	5/16 HOSE ID X 1/4 NPT MALE HOSE BARB, BRASS
74103101	3/4 HOSE ID X 1/2 NPT MALE HOSE BARB, BRASS
74103201	3/4 HOSE ID X 3/4 NPT MALE HOSE BARB, BRASS
74103301	1 HOSE ID X 3/4 NPT MALE HOSE BARB, BRASS

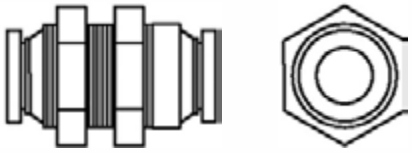


FITTINGS, METAL BULKHEADS

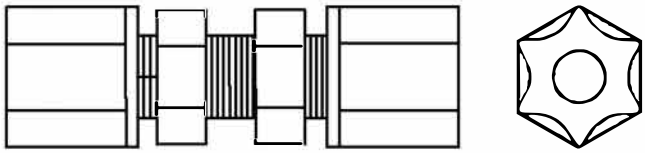
74300501	1/4 NPT FEMALE X 1/4 NPT FEMALE X 3/4–16, 1 1/2 LONG BULKHEAD COUPLING, BRASS
74300401	1/2 NPT FEMALE X 1/2 NPT FEMALE X 1 1/8–14, 1 1/2 LONG BULKHEAD COUPLING, BRASS



74101501	3/8 TUBE BULKHEAD UNION, BRASS
74101601	1/2 TUBE BULKHEAD UNION, BRASS



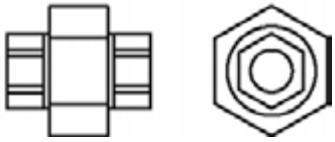
FITTINGS, PLASTIC BULKHEADS



74200801	1/4 TUBE BULKHEAD UNION, PLASTIC
74201001	3/8 TUBE BULKHEAD UNION, PLASTIC
74201101	1/2 TUBE BULKHEAD UNION, PLASTIC

FITTINGS, METAL UNIONS

74301201	1/4 NPT UNION, MACHINED, BRASS
74301301	3/8 NPT UNION, MACHINED, BRASS
74301401	1/2 NPT UNION, MACHINED, BRASS
74301501	3/4 NPT UNION, MACHINED, BRASS

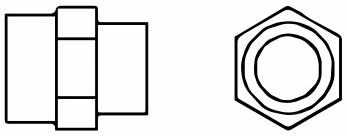


FITTINGS, PLASTIC UNIONS

74200701	1/2 TUBE UNION, PLASTIC

FITTINGS, METAL REDUCERS

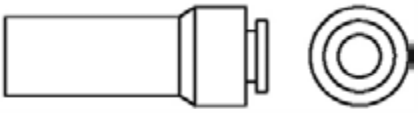
74305301	3/8 NPT FEMALE X 1/4 NPT FEMALE REDUCER COUPLING, BRASS
74305401	3/4 NPT FEMALE X 1/2 NPT FEMALE REDUCER COUPLING, BRASS



74303501	3/8 NPT MALE X 1/4 NPT MALE HEX REDUCER NIPPLE, BRASS
74303601	1/2 NPT MALE X 3/8 NPT MALE HEX REDUCER NIPPLE, BRASS

FITTINGS, PLASTIC REDUCERS

74101801	1/4 TUBE X 1/2 TUBE REDUCER, PLASTIC
74103501	1/4 TUBE X 3/8 TUBE REDUCER, PLASTIC



FITTINGS, METAL COUPLINGS

74301101	1/4 NPT FEMALE HEX COUPLING, BRASS
74307401	3/4 NPT FEMALE HEX COUPLING, BRASS

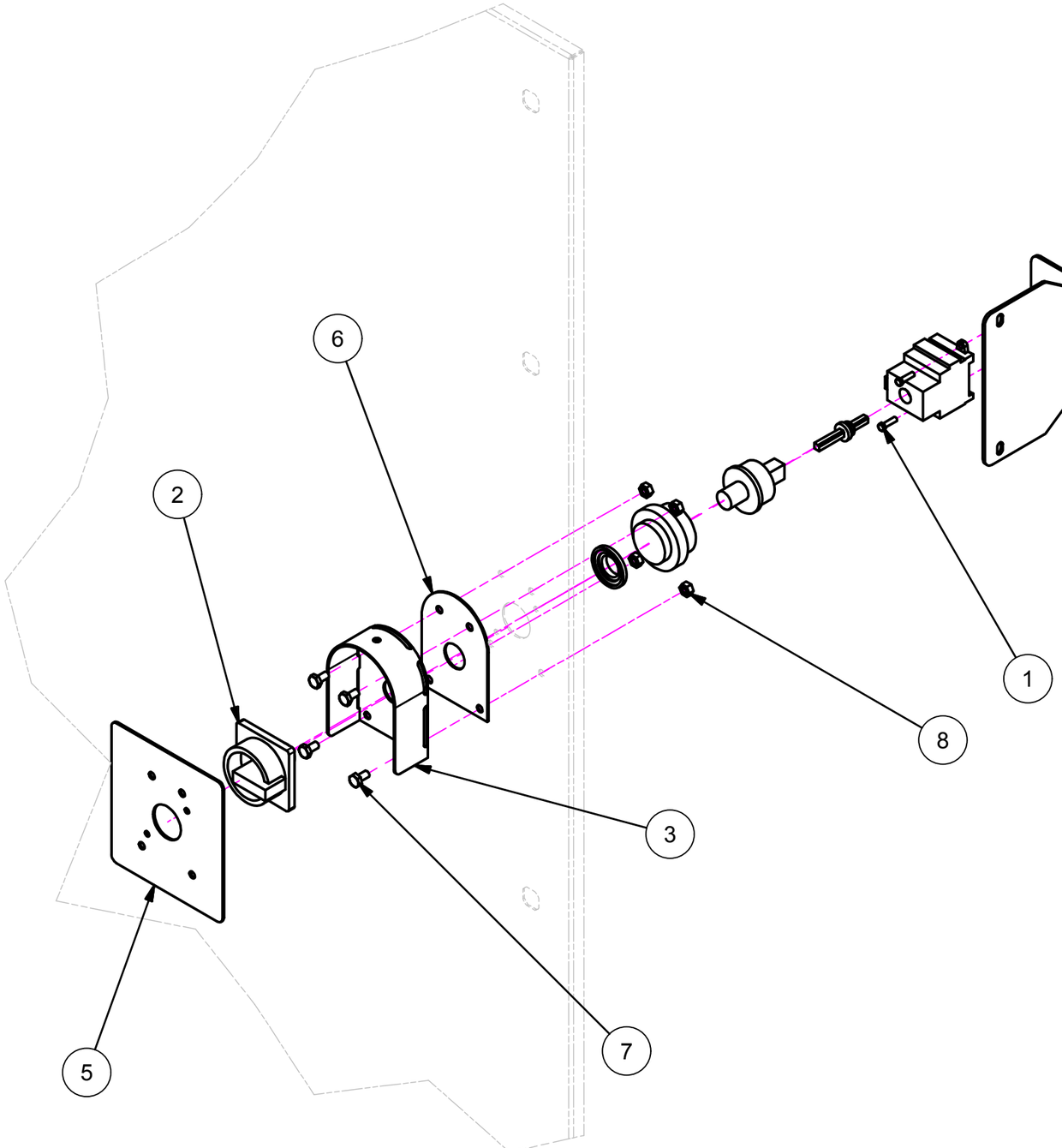
FITTINGS, METAL BREATHERS

74300101	1/4 NPT BREATHER VENT, BRASS

FITTINGS, PLASTIC BREATHERS

74400801	1/4 NPT BREATHER VENT, PLASTIC

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QT
1	109329C1	#8-32 X 5/8 LNG HEX HEAD MACHINE SCREW, S/S	2
2	122508C1	MK III DISCONNECT SWITCH COMPLETE	1
3	122640C1	MK III DISCONNECT RETROFIT WELDMENT	1
4	122648C1	MK III DISCONNECT BRACKET	1
5	122649C1	MK III DISCONNECT RETROFIT TEMPLATE	1
6	122650C1	MK III DISCONNECT GUARD GASKET	1
7	75109501	1/4-20 X 1/2 LNG HEX HEAD CAP SCREW, S/S	4
8	75109701	1/4-20 SEALING NUT	4



M-TEK INC.

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

APPROVED MFG: APPROVED ENG:

DRAWN BY: T. LIAKOPOULOS JR

TITLE:

MK III DISCONNECT RETROFIT

DWG NO.: MA110-0009

SCALE: N/A | DATE: 3/4/2014 | SHEET 1 OF 1

Type AM Fuse List

CV-TEK Part No.:	Description
71400701	Fuse, 1 Amp, Type AM
71400801	Fuse, 2 Amp, Type AM
71400901	Fuse, 4 Amp, Type AM
71401001	Fuse, 6 Amp, Type AM
71401101	Fuse, 8 Amp, Type AM
71401201	Fuse, 10 Amp, Type AM
71402501	Fuse, 16 Amp, Type AM
71401401	Fuse, 20 Amp, Type AM
71401501	Fuse, 25 Amp, Type AM
71401601	Fuse, 32 Amp, Type AM

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	110624C1	1/4-20 X 3/8 PAN HEAD, SLOTTED, S/S	2
2	113517C1	Ø1/4 X 1/2 DOWEL PIN, S/S	2
3	120144C1	DRAW LATCH	2
4	120401C1	6-32 X 3/8 PAN HEAD SEALING SCREW	4
5	120743C1	3 TIER SENSOR TERMINAL BLOCK; AWG: 24 - 12; W: 6.2MM; GRAY	10
6	120746C1	1 TIER FEED THROUGH TERMINAL BLOCK; AWG: 26-12; W; 5.2MM; GRAY	2
7	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	1
8	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
9	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	2
10	71109202	2-POSITION KEY SWITCH	1
11	122076C1	MK3 DISPLAY BOX WELDMENT	1
12	122083C1	MK3 DISPLAY BOX DOOR WELDMENT	1
13	122085C1	MK3 DISPLAY BOX WINDOW	1
14	122086C1	MK3 DISPLAY BOX DOOR GASKET	1
15	122087C1	MK3 DISPLAY BOX SUB PLATE	1
16	122088C1	MK3 DISPLAY BOX HINGE FLAG	2
17	122089C1	MK3 DISPLAY BOX HINGE POST	2
18	122091C1	QUARTER TURN DZUZ	2
19	122092C1	CLIP ON QUARTER TURN DZUZ PLATE	2
20	122093C1	QUARTER TURN DZUZ RETAINER	2
21	122094C1	"RUN/PROGRAM" 22mm SWITCH PLACARD	1
22	122095C1	QUARTER TURN WEAR WASHER	2
23	71002702	34 MM WIDE DIN RAIL (METER)	1
24	71023002	XLE SERIES OCS DISPLAY PLC COMBO, ANALOG I/O, 12 DIGITAL I/O	1
25	71104402	RED LED AND 3 ACROSS LATCH	1
26	71105201	LEGEND, YELLOW ROUND 60MM	1
27	71105802	CONTACT BLOCK, 22 mm 1NC/1NO	3
28	71106102	LATCH, 22mm 3 ACROSS	1
29	71601401	1/2 NPT SELING NUT	1
30	71604701	CORD GRIP 0.250-.375 3/4 90 DEG CE RATED	1
31	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	5
32	71605101 1	.20-.35 DIA. CORD GRIP, 1/2 NPT	1
33	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	7
34	71610701	3/4 CONDUIT LOCKNUT	1
35	75003001	CABLE TIE MOUNTING BASE, 1/4 SCREW SIZE, PANDUIT #TM3S25-C	2
36	75103501	6-32 LOCKNUT W/NYLON INSERT	4
37	75106001	1/4-20 X 1/2 PAN HEAD, SLOTTED, S/S	2
38	75113901	10-32 X 3/8 SEALING SLOTTED PAN HEAD MACHINE SCREW S/S	2
39	71105402	E-STOP BUTTON, ILLUMINATED, RED	1
40	71611601	CORD GRIP, SMALL DIA., 3/8 NPT GREY	2
41	110519C1	1/4-20 UNC X 3/8 LONG HEX HEAD CAP SCREW, STAINLESS STEEL	2
42	110824C1	1/4 FLAT WASHER (ARP .265 I.D. x .500 O.D. x .063 THK.)	2

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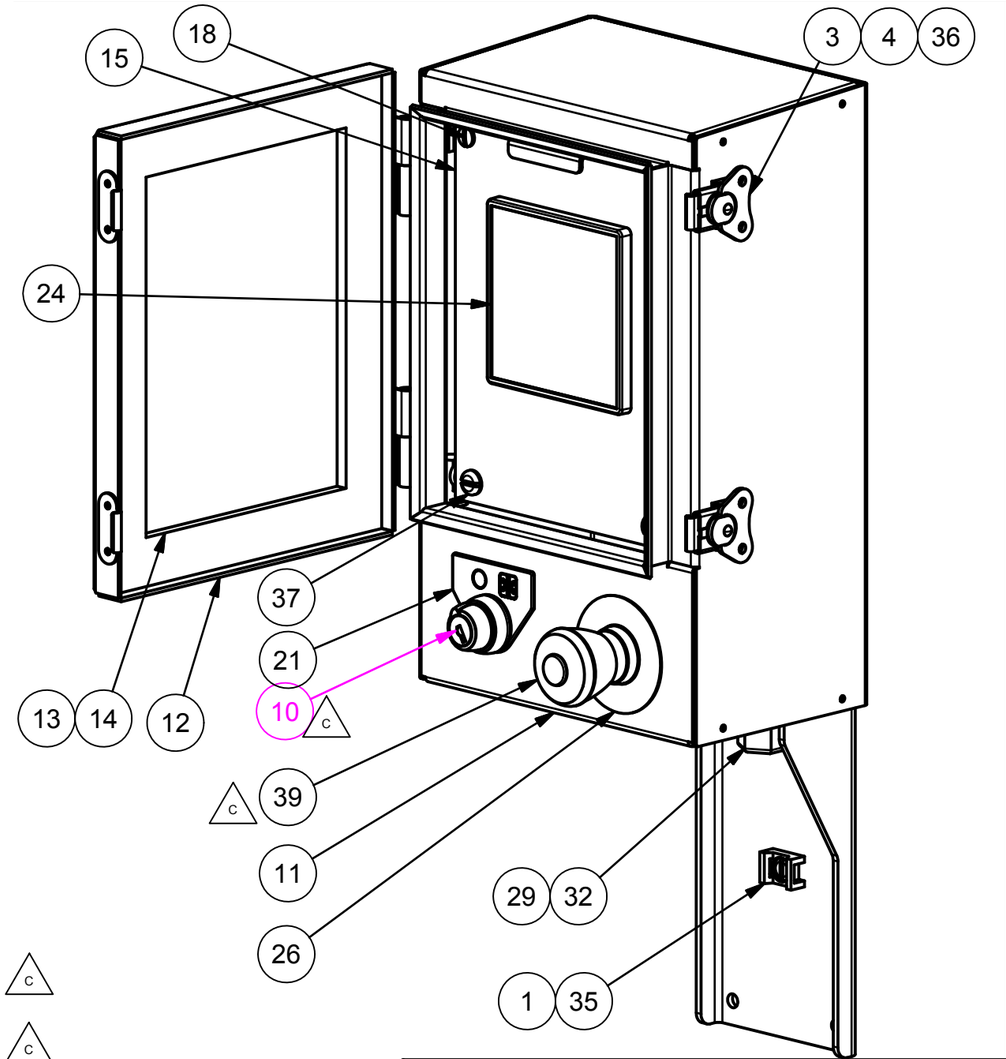
REVISIONS

ECO	REV	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	4/10/2017	MTEKCORP\\TomJR
	C	DELETED 120503C1; ADDED: 71105402, 2X71611601, 2X110824C1, 2X 110519C1, 2X 71605001, 4X 71607301	4/202022	PV
	C	REPLACED 121751C1 WITH 71109202	9/26/2022	RB



M-TEK INC.

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

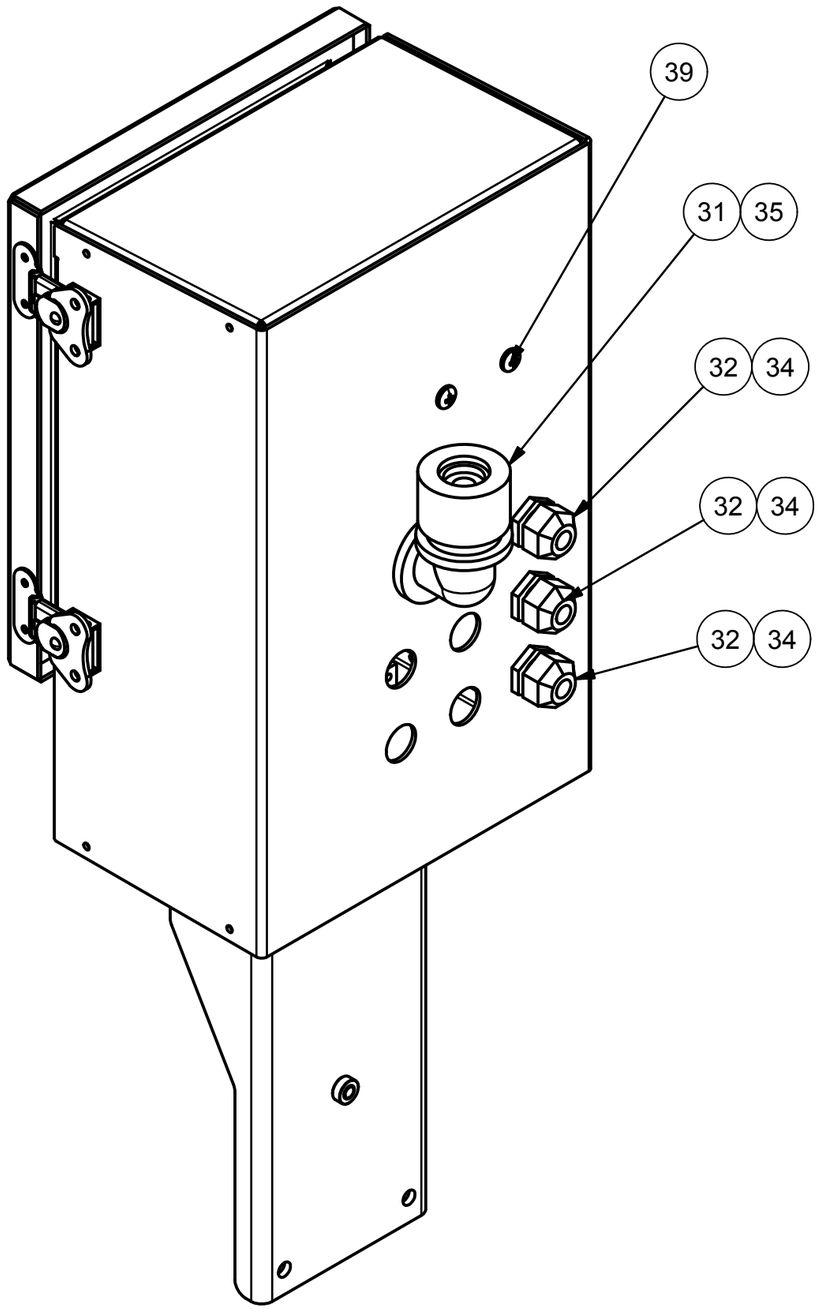
APPROVED MFG: APPROVED ENG:

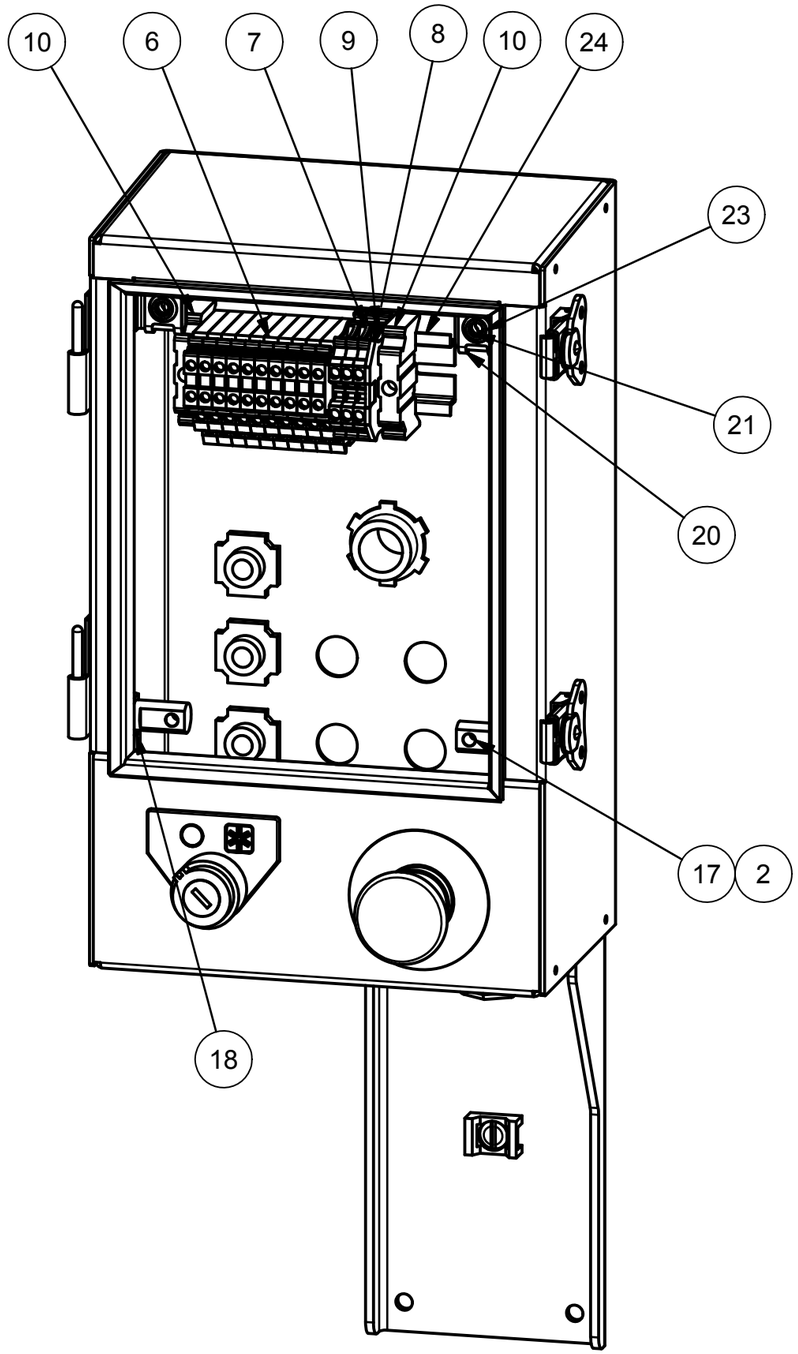
DRAWN BY: T. LIAKOPOULOS

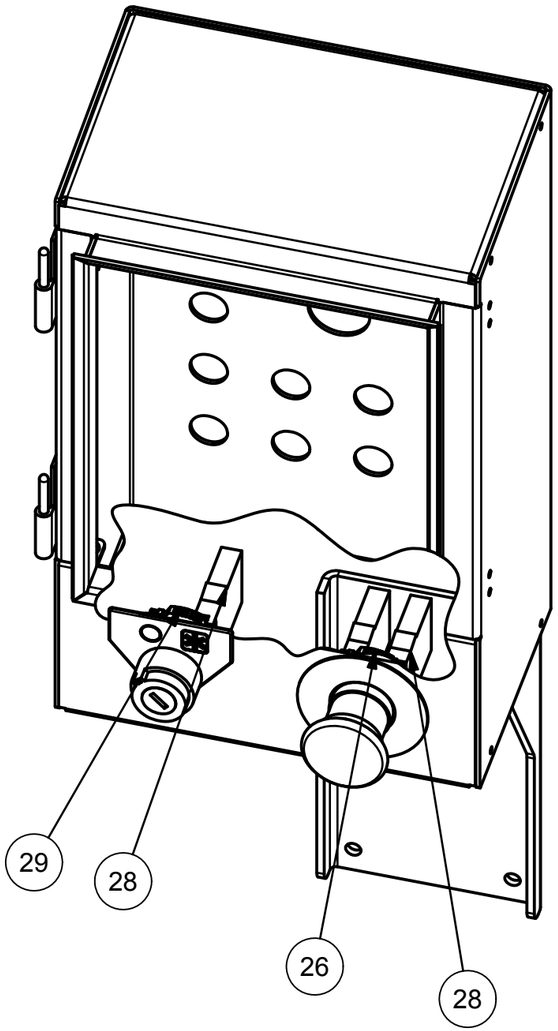
TITLE: MK3 DISPLAY BOX

DWG NO.: MA025-0008

SCALE: 0.35 : 1 | DATE: 6/18/2013 | SHEET 1 OF 2







M-TEK INC.

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

APPROVED MFG: APPROVED ENG:

DRAWN BY: T. LIAKOPOULOS

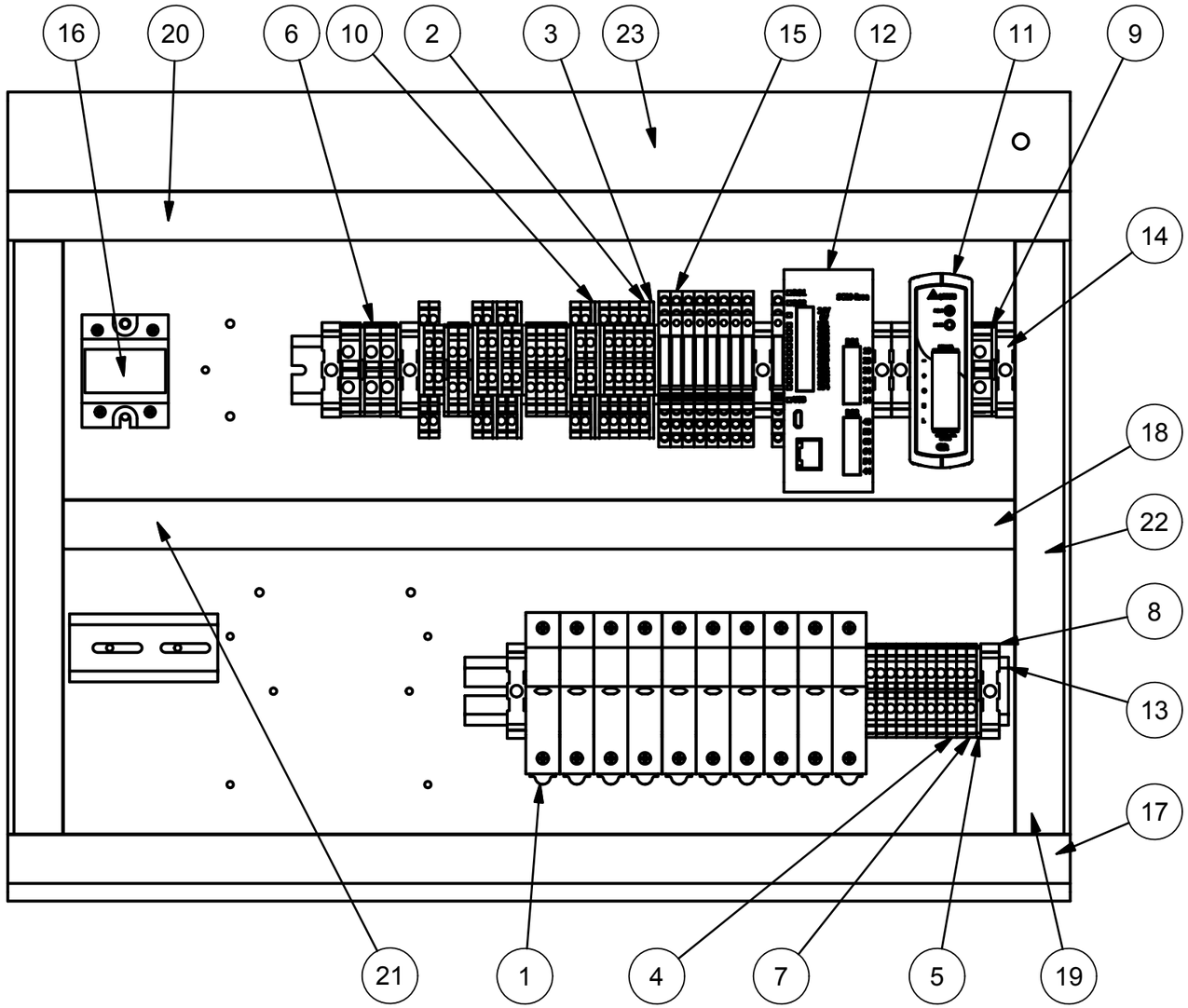
TITLE: MK3 DISPLAY BOX

DWG NO.: MA025-0008

SCALE: 0.35 : 1 | DATE: 6/18/2013 | SHEET 2 OF 2

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120475C2	FUSE BLOCK, MIDGET FUSE, 600V 32AMP	10
2	120716C1	TWO TIER TERMINAL BLOCK	13
3	120717C1	PARTITION PLATE FOR TWO TIER TERMINAL BLOCK	4
4	120746C1	1 TIER FEED THROUGH TERMINAL BLOCK; AWG: 26-12; W; 5.2MM; GRAY	16
5	120747C1	END COVER, L: 65.4 MM, W: 2.2 MM, H: 47.5 MM, COLOR: GRAY	7
6	120749C1	1 TIER FEED THROUGH TERMINAL BLOCK; AWG: 24-8; W; 8.2MM; GRAY	2
7	120751C1	1 TIER PE FEED THROUGH TERMINAL BLOCK; AWG:26-12; W:5.2MM; GRN/YEL	1
8	120752C1	END CLAMP, WIDTH: 9.5 MM, COLOR: GRAY	8
9	121105C1	GROUND TB, 2 POINT, GRN/YEL, 10MM^2	2
10	121494C1	SPACER PLATE FOR TWO TIER TERMINAL BLOCK	1
11	125089C1	2 AMP DIN MOUNT POWER SUPPLY	1
12	126047C1	BANNER SC10-2ROE SAFETY RELAY	1
13	71002701	RAIL, DIN 34 mm WIDE (METERS)	2
14	71002701-01	RAIL, DIN 34 mm WIDE (METERS)	1
15	71023201	PHOENIX CONTACT PLC-RSC-24DC/1/ACT	9
16	71104502	Relay, solid state 24-265VAC	1
17	71300801-01	WIRE DUCT 1 W X 1.5 H, WHITE T&B	2
18	71300801-02	WIRE DUCT 1 W X 1.5 H, WHITE T&B	1
19	71300801-03	WIRE DUCT 1 W X 1.5 H, WHITE T&B	2
20	71300901-01	WIRE DUCT COVER 1" WIDE, WHITE T&B	2
21	71300901-02	WIRE DUCT COVER 1" WIDE, WHITE T&B	1
22	71300901-03	WIRE DUCT COVER 1" WIDE, WHITE T&B	2
23	76210601	MK. 3 ELECT. PANEL - REMOTE PLC	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	ADDED SAFETY RELAY	8/31/2021	ME
C	CONDENSED TOP DIN RAIL TERMINALS	9/10/2021	AOK



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: Tomjr

TITLE:

BASE MK3 ELECTRICAL PANEL

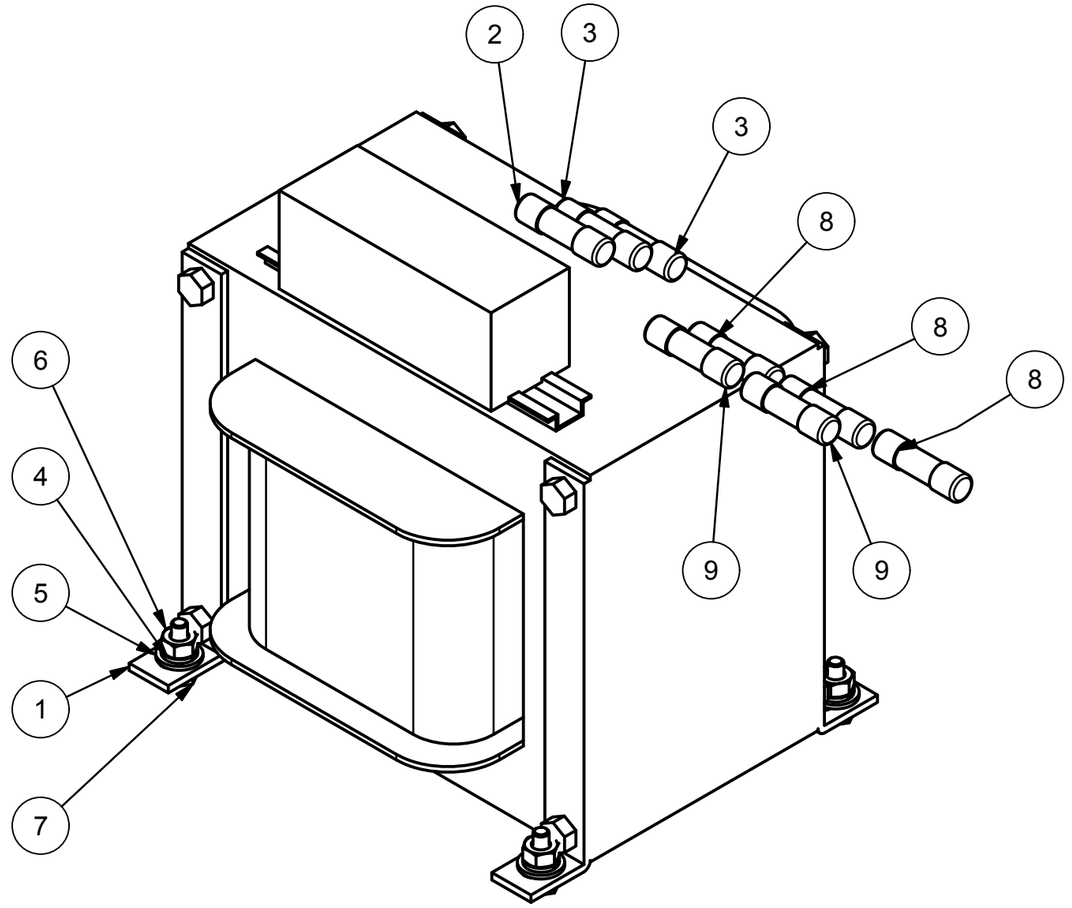
DWG NO.: MA110-0032 A

SCALE: N/A | DATE: 5/9/2018 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	111008C1	2.5KVA 220/380/415/440 X 24/115 VAC 50/60 HZ	1
2	71400901	Fuse 4 amp type aM	1
3	71401101	Fuse 8 amp type aM	2
4	75102601	1/4 MED SPLIT LOCK WASHERS, S/S	4
5	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	4
6	75103801	1/4-20 HEX NUT, S/S	4
7	75110901	1/4-20 X 3/4 SEALING HEX HEAD CAP SCREW, S/S	4
8	71400701	Fuse 1 amp type aM	3
9	71401001	Fuse 6 amp type aM	2

CHANGE FUSES #2 & #3 AS REQUIRED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI
B	ADD 71400701 AND 71401001	11/15/2024	VK



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE:

MK3 ALTRAN POWER ASSEMBLY

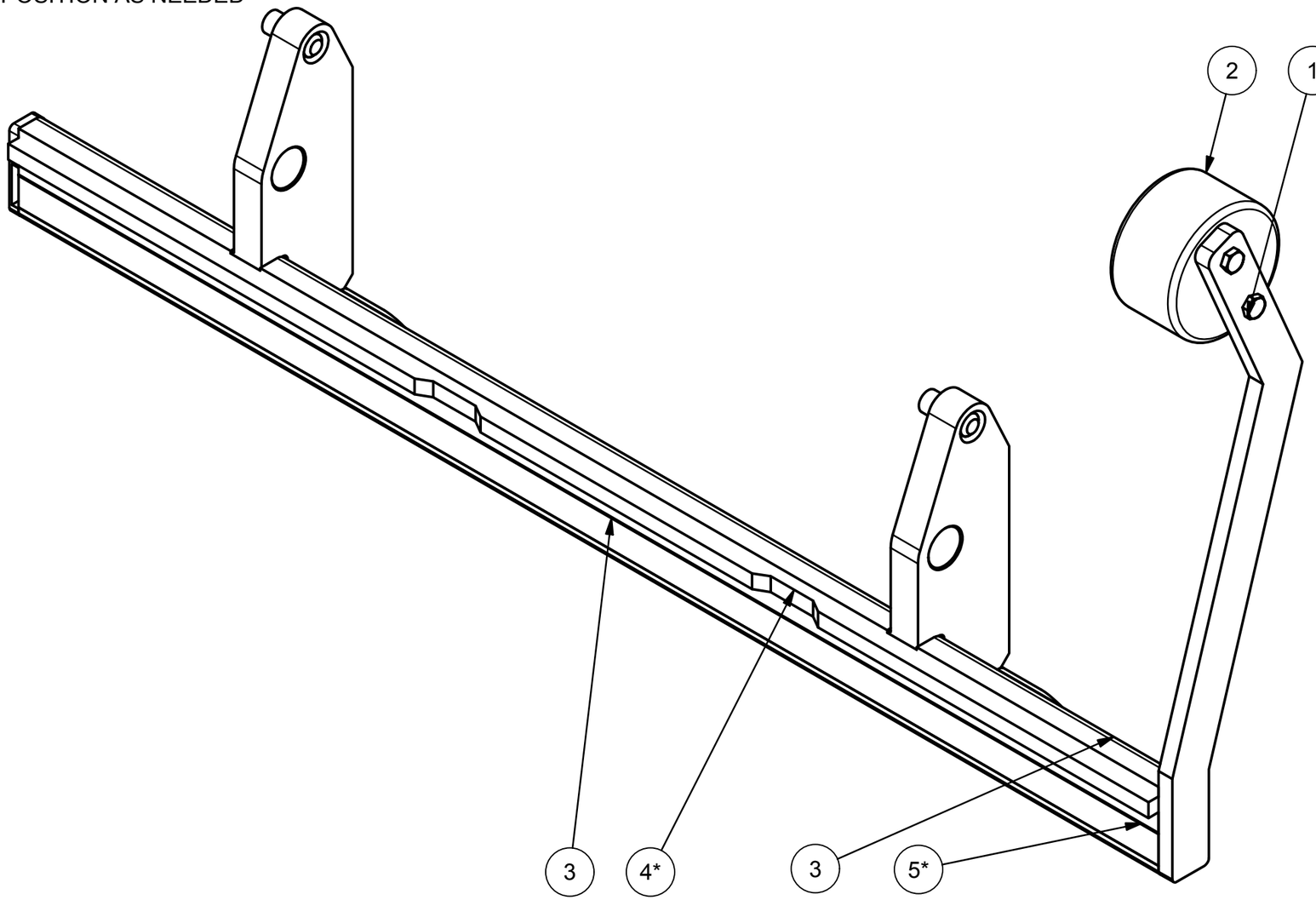
DWG NO.: MA110-0035 B

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108677C1	1/4-20 X 1 LNG HEX HEAD CAP SCREW, S/S	2
2	76103701A	COUNTERWEIGHT FOR BACKUP BAR	1
3	76110301	BACKUP BAR COMPLETE 30 HOT BAR	1
4*	79500302	BLACK RUBBER, BAG CLAMP, FRONT	2
5*	79501102	BLACK SEAL BAR RUBBER, 54 HEAD ACTUAL LENGTH 70"	1

* CUT AND POSITION AS NEEDED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI



FOR BUSHINGS USE:
MA264-0025 STANDARD SET
MA265-0026 USDA DAIRY SET

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

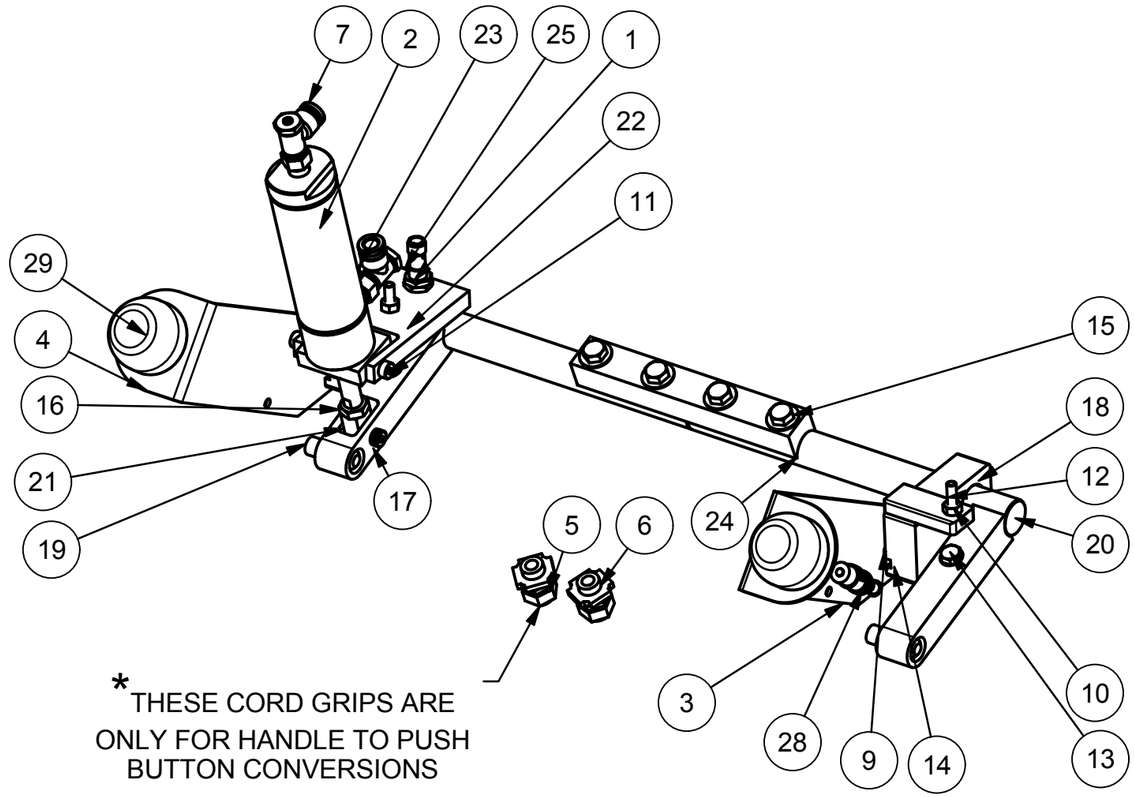
TITLE: MK3 30" MANUAL HOTBAR BACKUP BAR ASSEMBLY

DWG NO.: MA264-0001 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST				
ITEM	PART NO.	DESCRIPTION	QTY	
1	126048C1	M12 SAFETY PROX	1	
2	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	1	
3	129308C1	RH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1	
4	129310C1	LH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1	
5	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	2	
6	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	2	
7	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2	*
8	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1	*
9	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	10	
10	75103901	1/4-28 HEX NUT, S/S	2	
11	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2	
12	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2	
13	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2	
14	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	6	
15	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4	
16	75111401	7/16-20 HEX JAM NUT, S/S	1	
17	75111501	FIN SEAL BAR SHOULDER BOLT	1	
18	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	1	
19	76104301A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1	
20	76104401	PIVOT SHAFT RIGHT HAND 30	1	
21	76118501A	CLEVIS, JAW CLOSER CYLINDER	1	
22	76118601A	TRUNNION BLOCK, JAW CLOSER CYLINDER	1	
23	125471C1	MHSP AUTO JAW CLOSER MOD	1	
24	76118801A	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	1	
25	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	1	
26	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	1	
27	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1	
28	121782C1	M12 RND FML PLUG, STRGHT CONN. W/7.5M PUR-OB CABLE	4	
29	126512C1	BANNER K50 CAPACITIVE TOUCH BUTTON	2	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/22/2016	N.B
B	REPLACED 76118701A TO 125471C1 & 0210-3491 TO 126512C1	11/11/24	RB



*THESE CORD GRIPS ARE ONLY FOR HANDLE TO PUSH BUTTON CONVERSIONS

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C. ILONTA

DRAWN BY: M.E.

TITLE: MK3 30" AUTO BACKUP CLOSE ASSEMBLY W/ CAPACITIVE BUTTONS

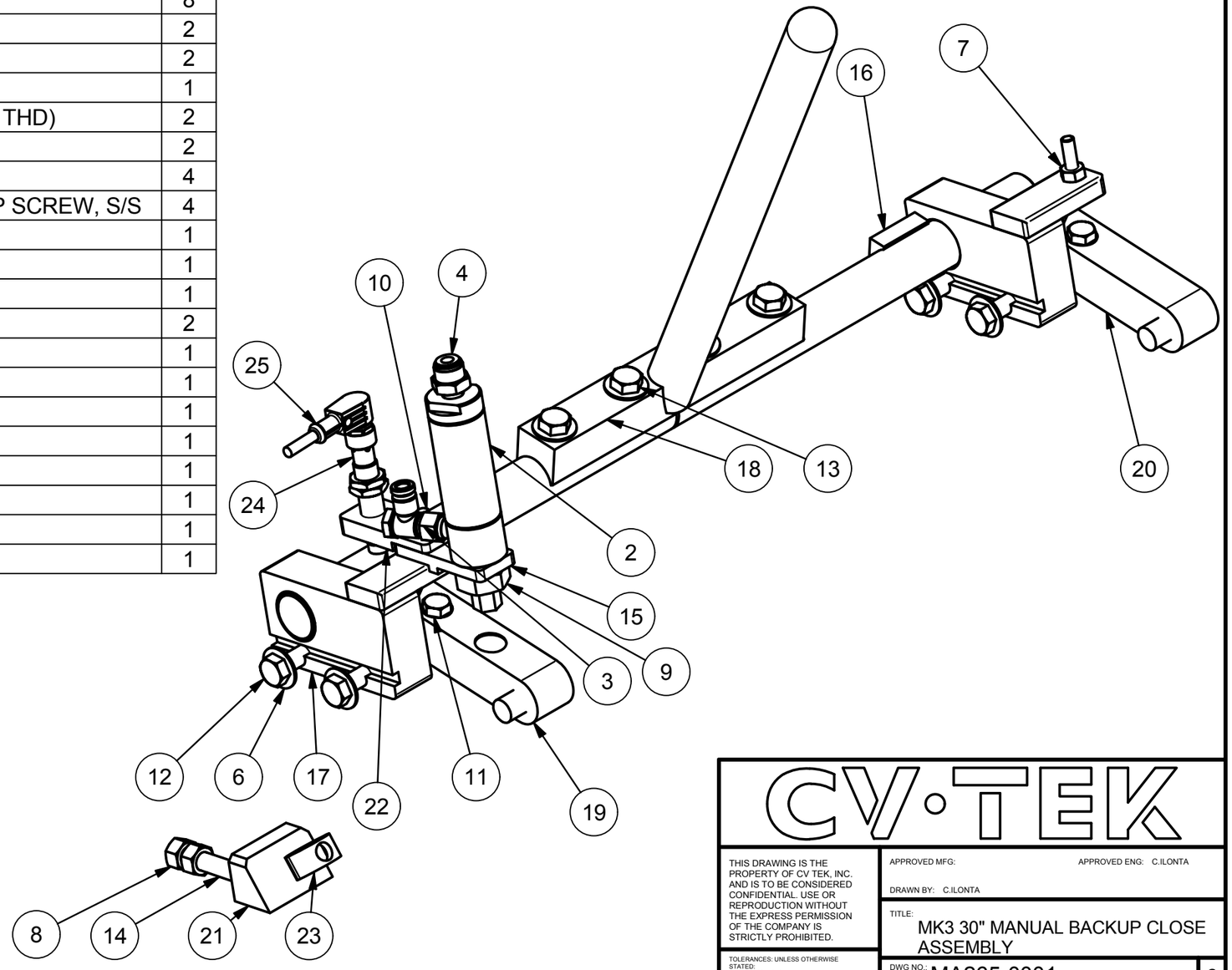
DWG NO.: MA265-0021 B

SCALE: N/A | DATE: 2/23/2016 | SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	109259C1	1/4-28 X 5/8 LNG HEX HEAD CAP SCREW, S/S	1
2	73200401	CYLINDER, AUTO JAW OPENER	1
3	73501702	Flow control, 1/8 NPT	1
4	74202701	1/4 O.D. TUBE X 1/8 NPT MALE CONNECTOR, PLASTIC	1
5	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	1
6	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	8
7	75103901	1/4-28 HEX NUT, S/S	2
8	75104201	3/8-16 HEX NUT, S/S	2
9	75104401	5/8-18 HEX JAM NUT, S/S	1
10	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2
11	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2
12	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
13	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4
14	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	1
15	76102101	BRACKET, MTG. AUTO JAW CYLINDER	1
16	76103102A	STOP, PIVOT SHAFT	1
17	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	2
18	76104201	HANDLE; PIVOT SHAFT	1
19	76104301A	PIVOT SHAFT LEFT HAND 30	1
20	76104401	PIVOT SHAFT RIGHT HAND 30	1
21	76110101A	BUMPER MTG BLOCK, PIVOT SHAFT	1
22	76119401A	BRACKET, PROXIMITY SWITCH MOUNTING	1
23	79500901	BUMPER, PIVOT SHAFT	1
24	126048C1	M12 SAFETY PROX	1
25	120586C1	M12 4 PIN 90DEGREE 1.5METER BLACK CABLE	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI
B	NEW SENSOR AND RELEASE ASSEMBLY	11/1/2021	AOK
C	REPLACED 71109701 WITH 126048C1, ADDED 120586C1	11/26/24	RB



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED
NOMINAL = ±.1
X.X = ±.1
X.XX = ±.01
X.XXX = ±.005
DRILLED HOLE: STANDARD ISO

APPROVED MFG:
APPROVED ENG: C.ILONTA
DRAWN BY: C.ILONTA

TITLE: MK3 30" MANUAL BACKUP CLOSE ASSEMBLY

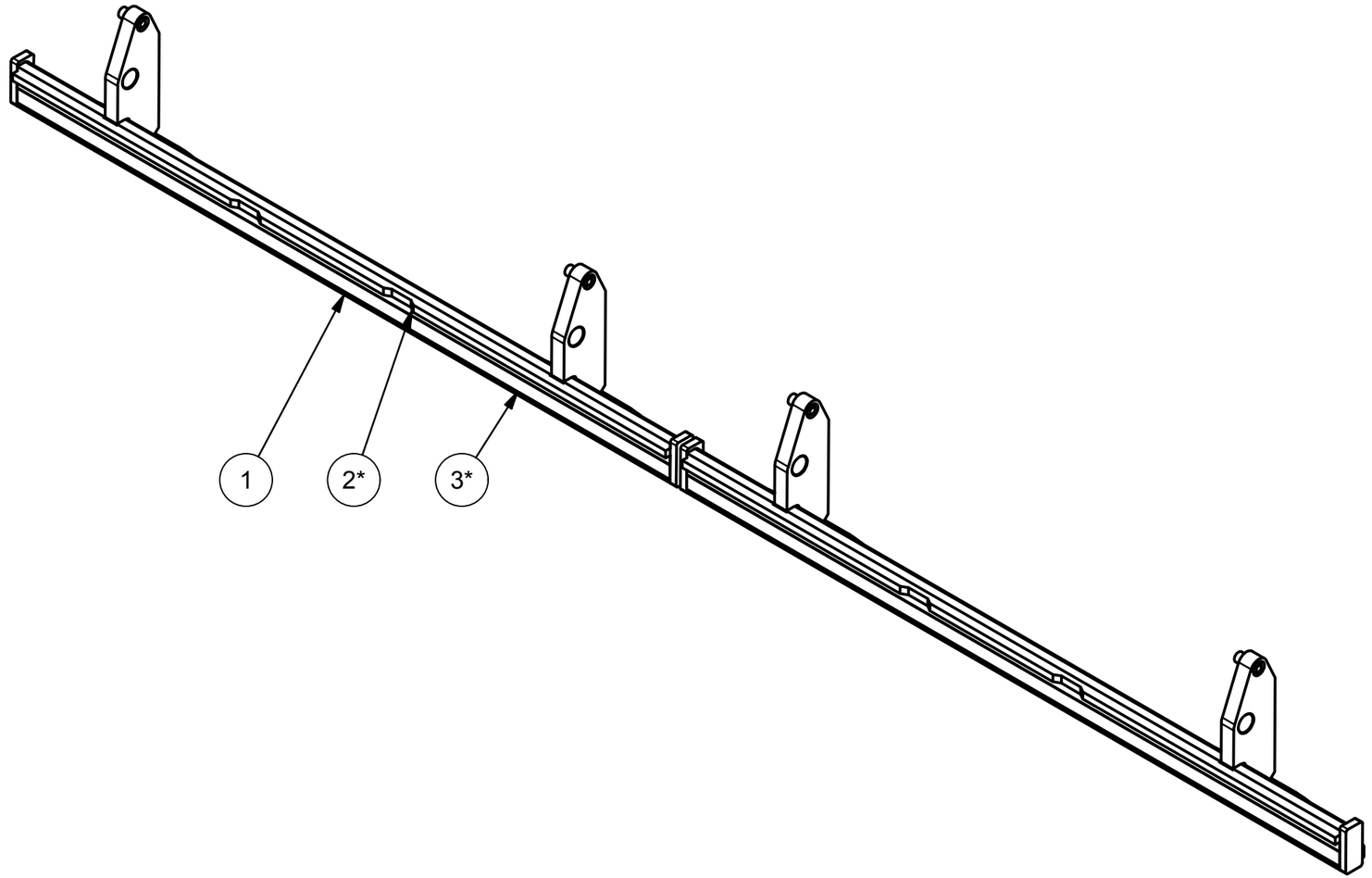
DWG NO.: MA265-0001 C

SCALE: N/A | DATE: 11/1/2018 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	76122201	37.5" BACKUP BAR COMPLETE FOR DUAL HEAD	2
2*	79500302	BLACK RUBBER, BAG CLAMP, FRONT	2
3*	79501102	BLACK SEAL BAR RUBBER, 54 HEAD ACTUAL LENGTH 70"	2

*- CUT AS NEEDED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/13/2018	CI



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE:
MK3 37.5" AUTO JAW HOTBAR
DOUBLE BACKUP BAR ASSEMBLY

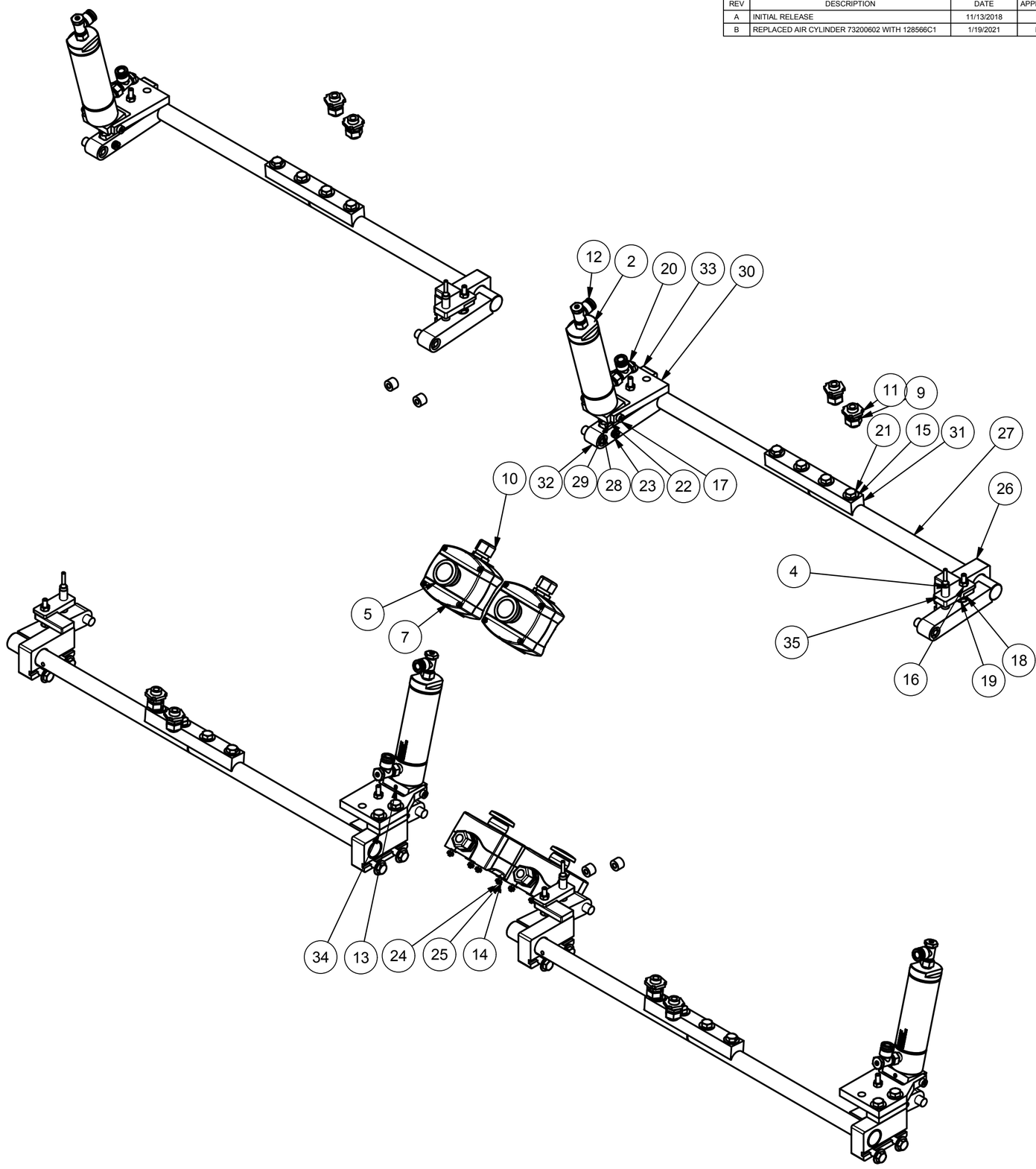
DWG NO.: MA264-0005 A

SCALE: N/A | DATE: | SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/13/2018	CI
B	REPLACED AIR CYLINDER 73200602 WITH 128566C1	1/19/2021	ME

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	120210C1	SPACER, GEAR BOX MTG	2
2	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	2
3	71106102	LATCH, 22mm 3 ACROSS	2
4	71109701	TURCK U PROXIMITY SWITCH, 12MM	2
5	71113901	GREEN PUSH BUTTON 40mm MUSHROOM HEAD W/LATCH	2
6	71114001	CONTACT BLOCK N.O.	2
7	71301201	ENLCOSURE, PLASTIC YELLOW PUSH BUTTON	2
8	71601401	1/2 NPT SELING NUT	2
9	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	4
10	71605101 1	.20-.35 DIA. CORD GRIP, 1/2 NPT	2
11	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	4
12	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	4
13	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	2
14	75102401	#8 MED SPLIT LOCK WASHERS, S/S	8
15	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	20
16	75103901	1/4-28 HEX NUT, S/S	4
17	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	4
18	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	4
19	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	4
20	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	12
21	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	8
22	75111401	7/16-20 HEX JAM NUT, S/S	2
23	75111501	FIN SEAL BAR SHOULDER BOLT	2
24	75120101	#6-32 X 1/2 PAN HEAD, SLOTTED, S/S	8
25	75200401	#6-32 HEX NUT, S/S	8
26	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	2
27	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	2
28	76118501A	CLEVIS, JAW CLOSER CYLINDER	2
29	76118601A	TRUNNION BLOCK, JAW CLOSER CYLINDER	2
30	76118701A	TRUNNION BRACKET, JAW CLOSER CYLINDER	2
31	76118801A	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	2
32	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	2
33	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	2
34	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	2
35	76119401A	BRACKET, PROXIMITY SWITCH MOUNTING	2
36	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	2



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TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL ± ± .1
X.X ± ± .1
X.XX ± ± .01
X.XXX ± ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG:
APPROVED ENG: C. ILONTA
DRAWN BY: C. ILONTA

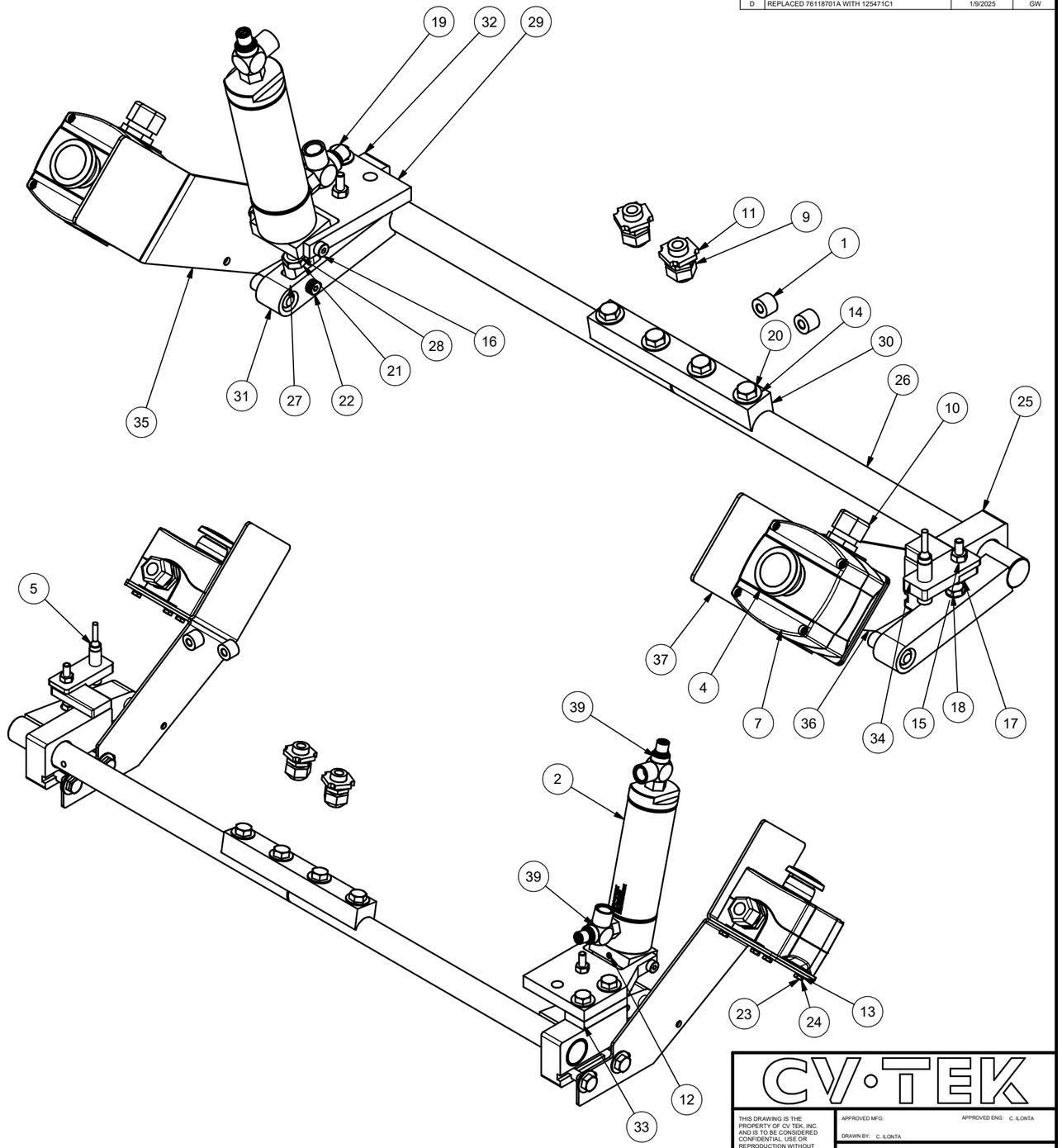
TITLE: MK3 37.5" DUAL AUTO BACKUP CLOSE ASSEMBLY

DWG NO.: MA265-0012 B

SCALE: N/A | DATE: 2/23/2016 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120210C1	SPACER, GEAR BOX MTG	2
2	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	1
3	71106102	LATCH, 22mm 3 ACROSS	2
4	71113901	GREEN PUSH BUTTON 40mm MUSHROOM HEAD W/LATCH	2
5	71109701	TURCK U PROXIMITY SWITCH, 12MM	1
6	71114001	CONTACT BLOCK N.O.	2
7	71301201	ENLCOSURE, PLASTIC YELLOW PUSH BUTTON	2
8	71601401	1/2 NPT SELING NUT	2
9	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	2
10	71605101 1	.20-.35 DIA. CORD GRIP, 1/2 NPT	2
11	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	2
12	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1
13	75102401	#8 MED SPLIT LOCK WASHERS, S/S	8
14	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	12
15	75103901	1/4-28 HEX NUT, S/S	2
16	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
17	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2
18	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2
19	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	8
20	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4
21	75111401	7/16-20 HEX JAM NUT, S/S	1
22	75111501	FIN SEAL BAR SHOULDER BOLT	1
23	75120101	#6-32 X 1/2 PAN HEAD, SLOTTED, S/S	8
24	75200401	#6-32 HEX NUT, S/S	8
25	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	1
26	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1
27	76118501A	CLEVIS, JAW CLOSER CYLINDER	1
28	76118601A	TRUNNION BLOCK, JAW CLOSER CYLINDER	1
29	125471C1	MHSP AUTO JAW CLOSER MOD	1
30	76118801A	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	1
31	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1
32	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	1
33	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	1
34	76119401A	BRACKET, PROXIMITY SWITCH MOUNTING	1
35	76120701A	SWITCH BRACKET, HEAD MOUNTED, AUTO JAW CLOSER CONTROLI, LH	1
36	76120801A	SWITCH BRACKET, HEAD MOUNTED, AUTO JAW CLOSER CONTROLI, RH	1
37	76120901A	GUARD, SWITCH BRACKET, LEFT HAND AND RIGHT HAND, HEAD MOUNTED AUTO JAW CLOSER CONTROL	2
38	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1
39	73501101	1/4 NPT FLOW CONTROL VALVE	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B
B	REPLACED AIR CYLINDER 73200602 WITH 128566C1	1/19/2021	ME
C	FLOW CONTROL 73501102 REPLACED WITH 73501101	11/26/2024	RB
D	REPLACED 76118701A WITH 125471C1	1/9/2025	GW



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APPROVED MFG: APPROVED ENG: C. ILONTA

DRAWN BY: C. ILONTA

TITLE: MK3 54" AUTO BACKUP CLOSE ASSEMBLY

TOLERANCES: UNLESS OTHERWISE STATED
NOMINAL = ± 1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE STANDARD ISO

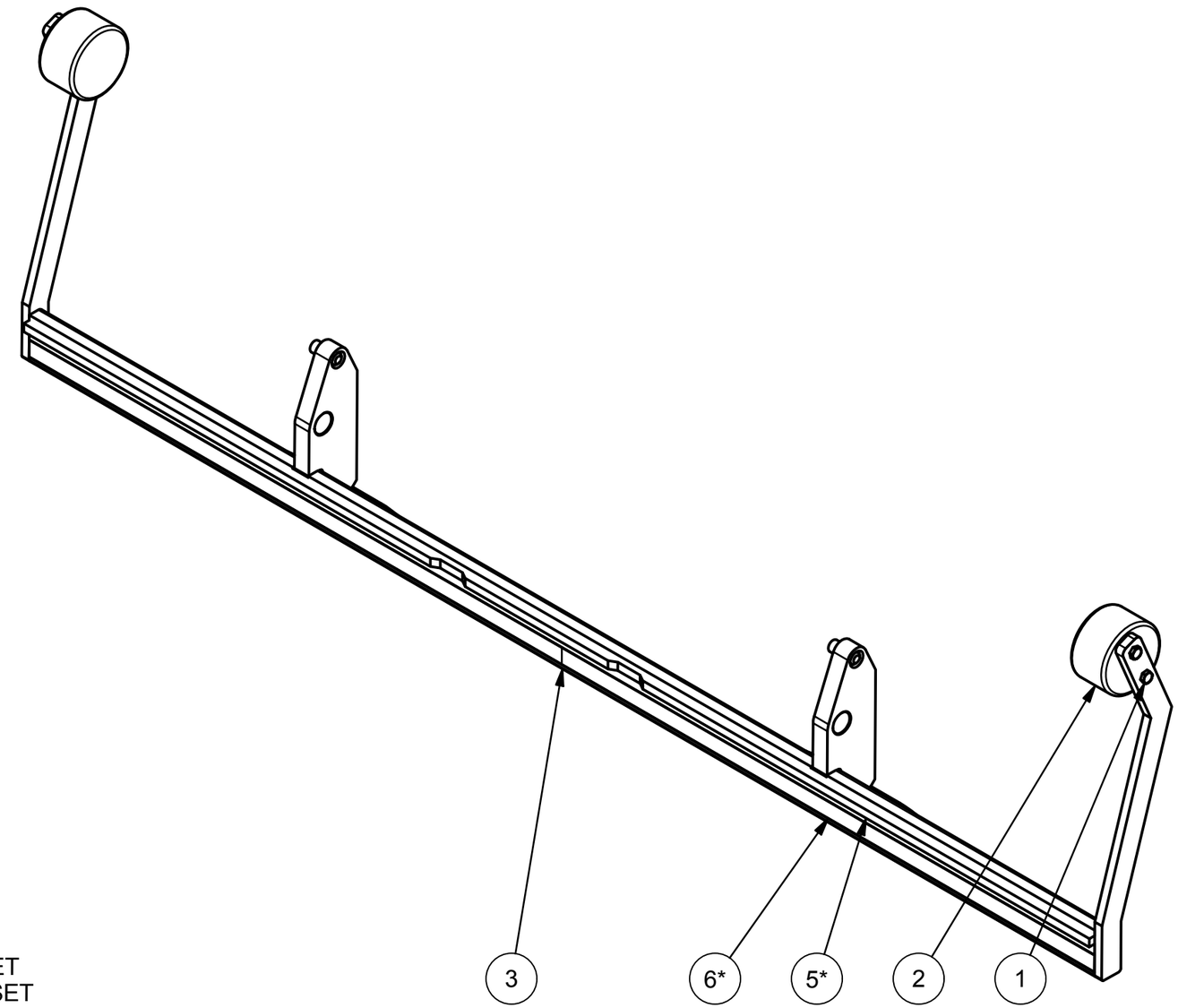
DWG NO: MA265-0011 D

SCALE: N/A | DATE: 2/23/2016 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108677C1	1/4-20 X 1 LNG HEX HEAD CAP SCREW, S/S	4
2	76103701A	COUNTERWEIGHT FOR BACKUP BAR	2
3	76110401	BACKUP BAR COMPLETE 54 HOT BAR SEALER WELD	1
5*	79500302	BLACK RUBBER, BAG CLAMP, FRONT	2
6*	79501102	BLACK SEAL BAR RUBBER, 54 HEAD ACTUAL LENGTH 70"	1

* CUT AND POSITION AS NEEDED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI



FOR BUSHINGS USE:
MA264-0025 STANDARD SET
MA265-0026 USDA DAIRY SET

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

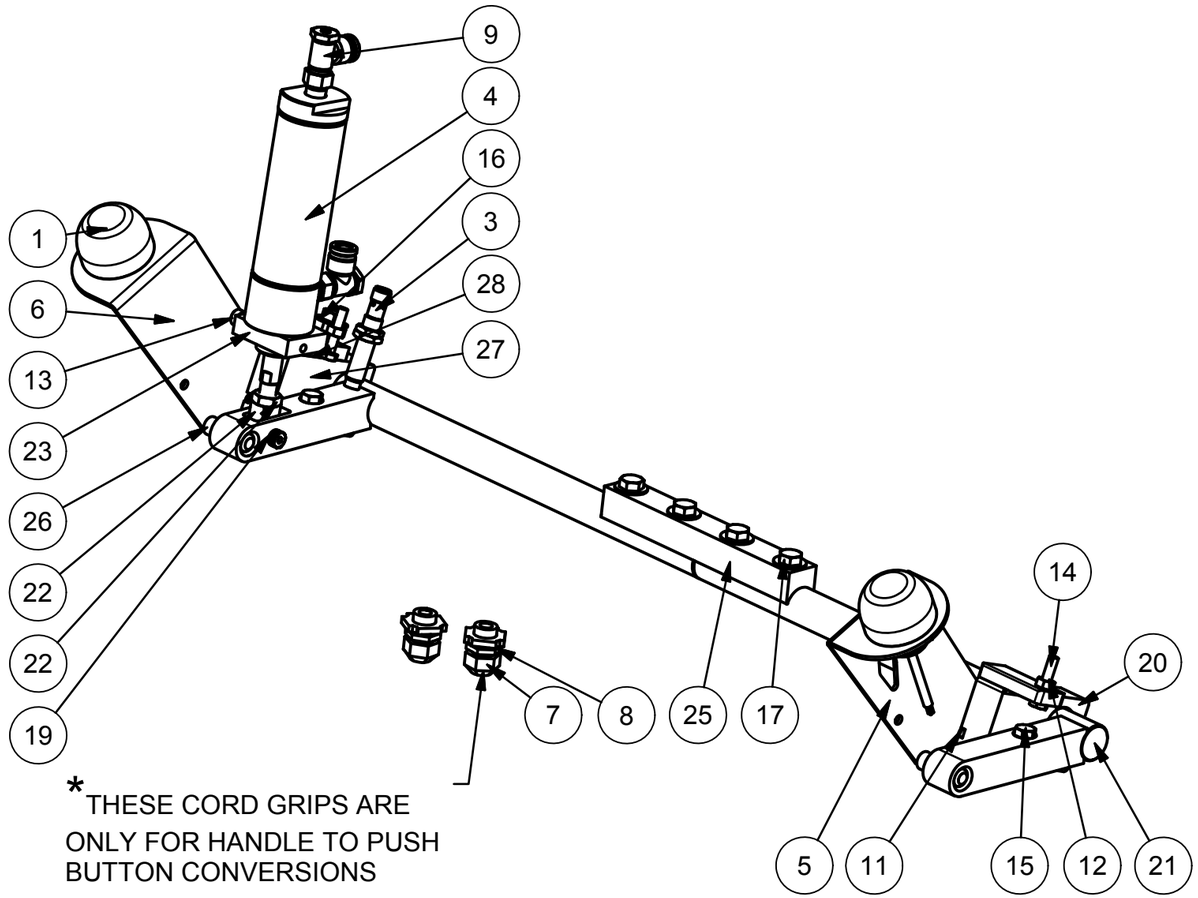
TITLE: MK3 54" MANUAL HOTBAR BACKUP BAR ASSEMBLY

DWG NO.: MA264-0011 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST				
ITEM	PART NO.	DESCRIPTION	QTY	
1	0210-3491	BANNER K50 CAPACITIVE BUTTON	2	
3	126048C1	IFM M12 SAFETY PROX	1	
4	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	1	
5	129308C1	RH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1	
6	129310C1	LH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1	
7	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	2	
8	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	2	*
9	73501101	1/4 NPT X 3/8 TUBE FLOW CONTROL	2	*
10	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1	
11	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	12	
12	75103901	1/4-28 HEX NUT, S/S	2	
13	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2	
14	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2	
15	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2	
16	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	8	
17	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4	
18	75111401	7/16-20 HEX JAM NUT, S/S	1	
19	75111501	FIN SEAL BAR SHOULDER BOLT	1	
20	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	1	
21	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1	
22	76118501A	CLEVIS, JAW CLOSER CYLINDER	1	
23	76118601A	TRUNNION BLOCK, JAW CLOSER CYLINDER	1	
24	76118701A	TRUNNION BRACKET, JAW CLOSER CYLINDER	1	
25	76118801A	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	1	
26	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1	
27	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	1	
28	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	1	
30	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B



*THESE CORD GRIPS ARE ONLY FOR HANDLE TO PUSH BUTTON CONVERSIONS

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C. ILONTA

DRAWN BY: M.EVANS

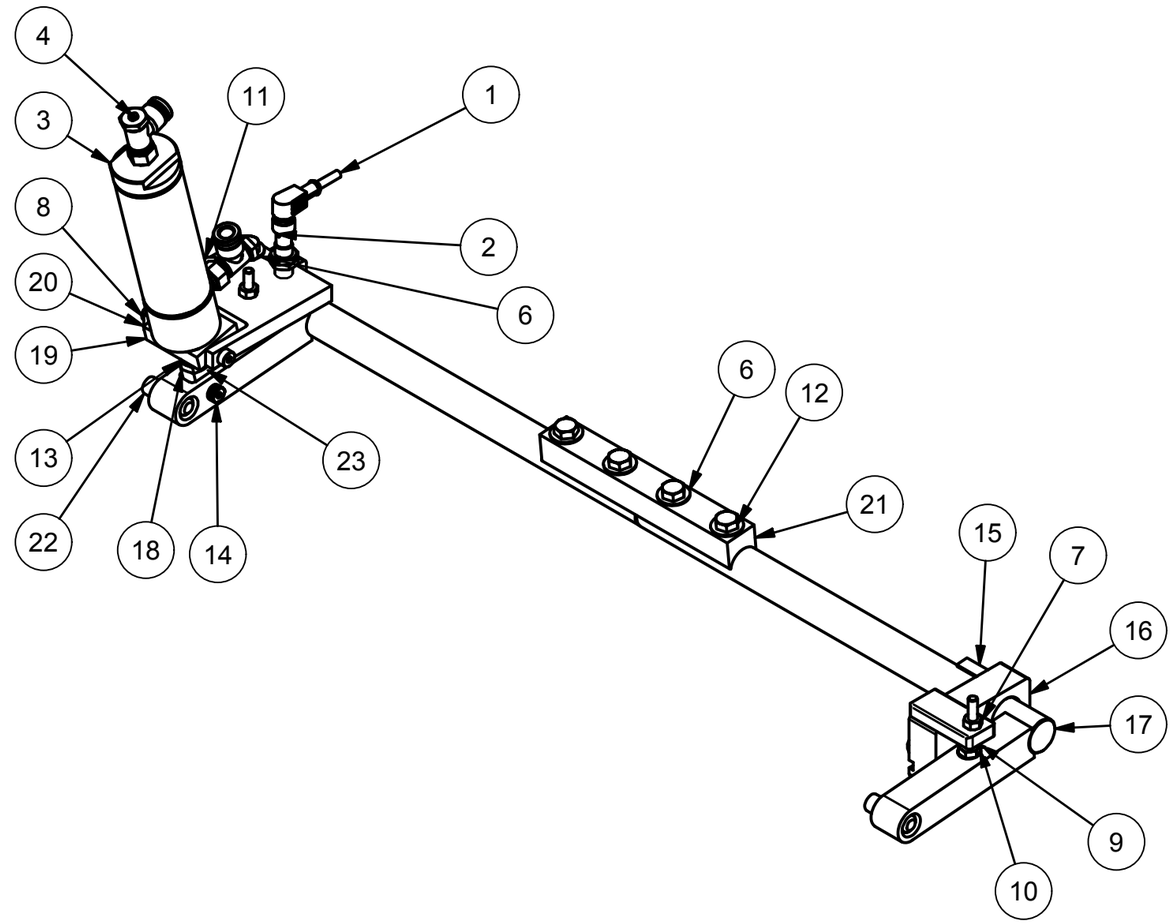
TITLE: MK3 54" AUTO BACKUP CLOSE ASSEMBLY W/ CAPACITIVE BUTTONS

DWG NO.: MA265-0022 A

SCALE: N/A DATE: 2/23/2016 SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120586C1	M12 4PIN 90DEG 2M BLACK FEMALE CABLE	1
2	126048C1	M12 SAFETY PROX	1
3	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	1
4	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
5	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1
6	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	10
7	75103901	1/4-28 HEX NUT, S/S	2
8	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
9	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2
10	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2
11	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	6
12	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4
13	75111401	7/16-20 HEX JAM NUT, S/S	1
14	75111501	FIN SEAL BAR SHOULDER BOLT	1
15	76103102A	STOP, PIVOT SHAFT	1
16	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	1
17	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1
18	76118501A	CLEVIS, JAW CLOSER CYLINDER	1
19	76118601A	TRUNNION BLOCK, JAW CLOSER CYLINDER	1
20	76118701A	TRUNNION BRACKET, JAW CLOSER CYLINDER	1
21	76118801A	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	1
22	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1
23	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	1
24	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	1
25	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/12/2016	N.B
B	REPLACED AIR CYLINDER 73200602 WITH 128566C1	1/19/2021	ME



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C. ILONTA

DRAWN BY: C. ILONTA

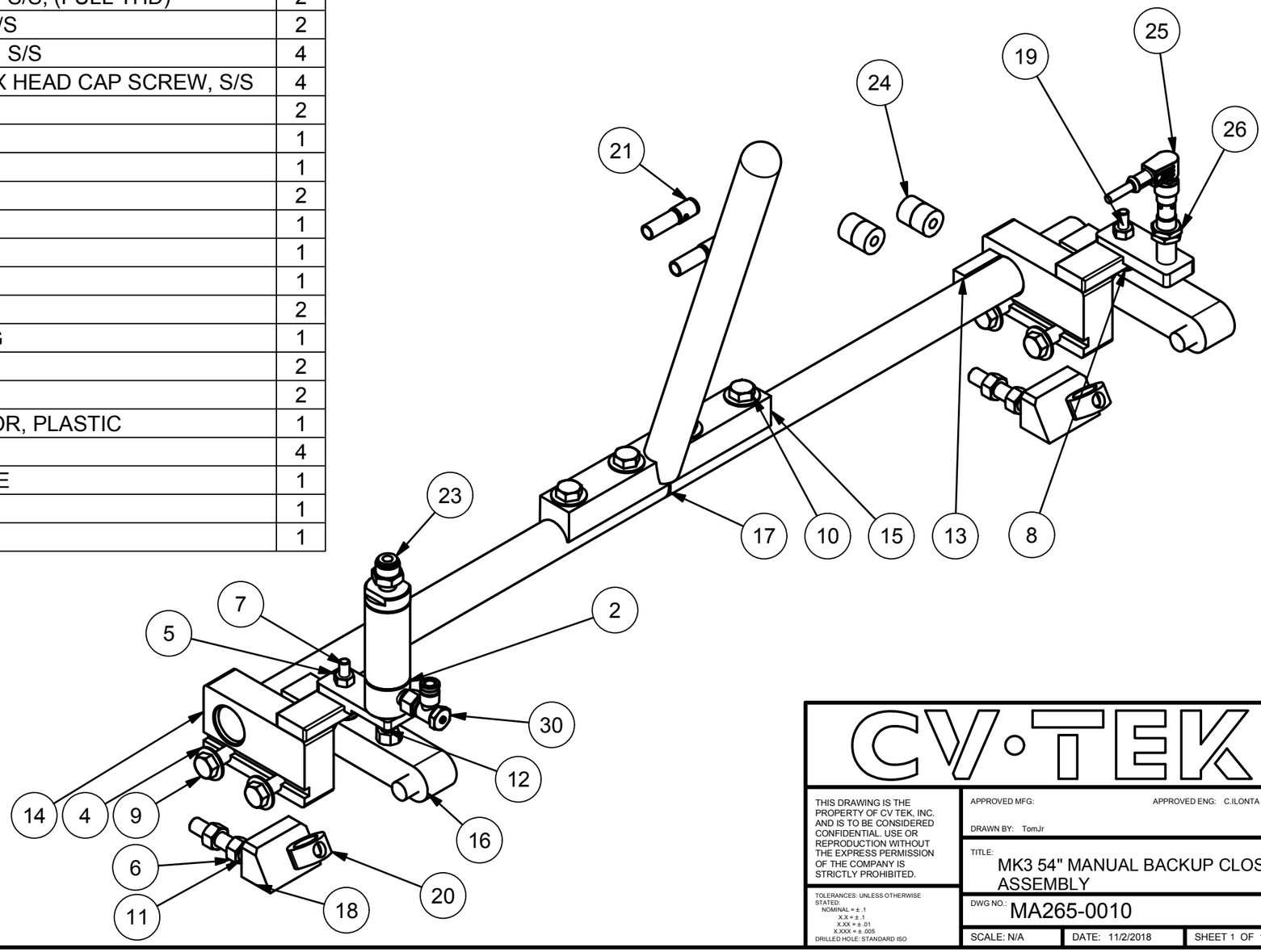
TITLE: MK3 54" AUTO BACKUP CLOSE ASSEMBLY

DWG NO.: MA265-0013 B

SCALE: N/A | DATE: 2/23/2016 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	109259C1	1/4-28 X 5/8 LNG HEX HEAD CAP SCREW, S/S	1
2	73200401	CYLINDER, AUTO JAW OPENER	1
3	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	1
4	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	8
5	75103901	1/4-28 HEX NUT, S/S	2
6	75104201	3/8-16 HEX NUT, S/S	4
7	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	2
8	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2
9	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
10	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4
11	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	2
12	76102101	BRACKET, MTG. AUTO JAW CYLINDER	1
13	76103102A	STOP, PIVOT SHAFT	1
14	76103801A	BEARING BLOCK, LH/RH PIVOT SHAFT	2
15	76104201	HANDLE; PIVOT SHAFT	1
16	76104501	PIVOT SHAFT LEFT HAND 54 / 61-1/2	1
17	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1
18	76110101A	BUMPER MTG BLOCK, PIVOT SHAFT	2
19	76119401A	BRACKET, PROXIMITY SWITCH MOUNTING	1
20	79500901	BUMPER, PIVOT SHAFT	2
21	74103501	1/4 X 3/8 Reducer, plastic	2
23	74202701	1/4 O.D. TUBE X 1/8 NPT MALE CONNECTOR, PLASTIC	1
24	129828C1	mHSP FRL MOUNT SPACER	4
25	120586C1	M12 4PIN 90DEG 2M BLACK FEMALE CABLE	1
26	126048C1	M12 SAFETY PROX	1
30	73501702	Flow control, 1/8 NPT	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI
B	ADDED 129828C1 AND 74103501	1/11/2024	RB
C	REPLACED 110411C1 & 121782C1 WITH 120586C1 & 126048C1 & 73501702	11/26/24	RB



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG: C.ILONTA

DRAWN BY: TomJr

TITLE: MK3 54" MANUAL BACKUP CLOSE ASSEMBLY

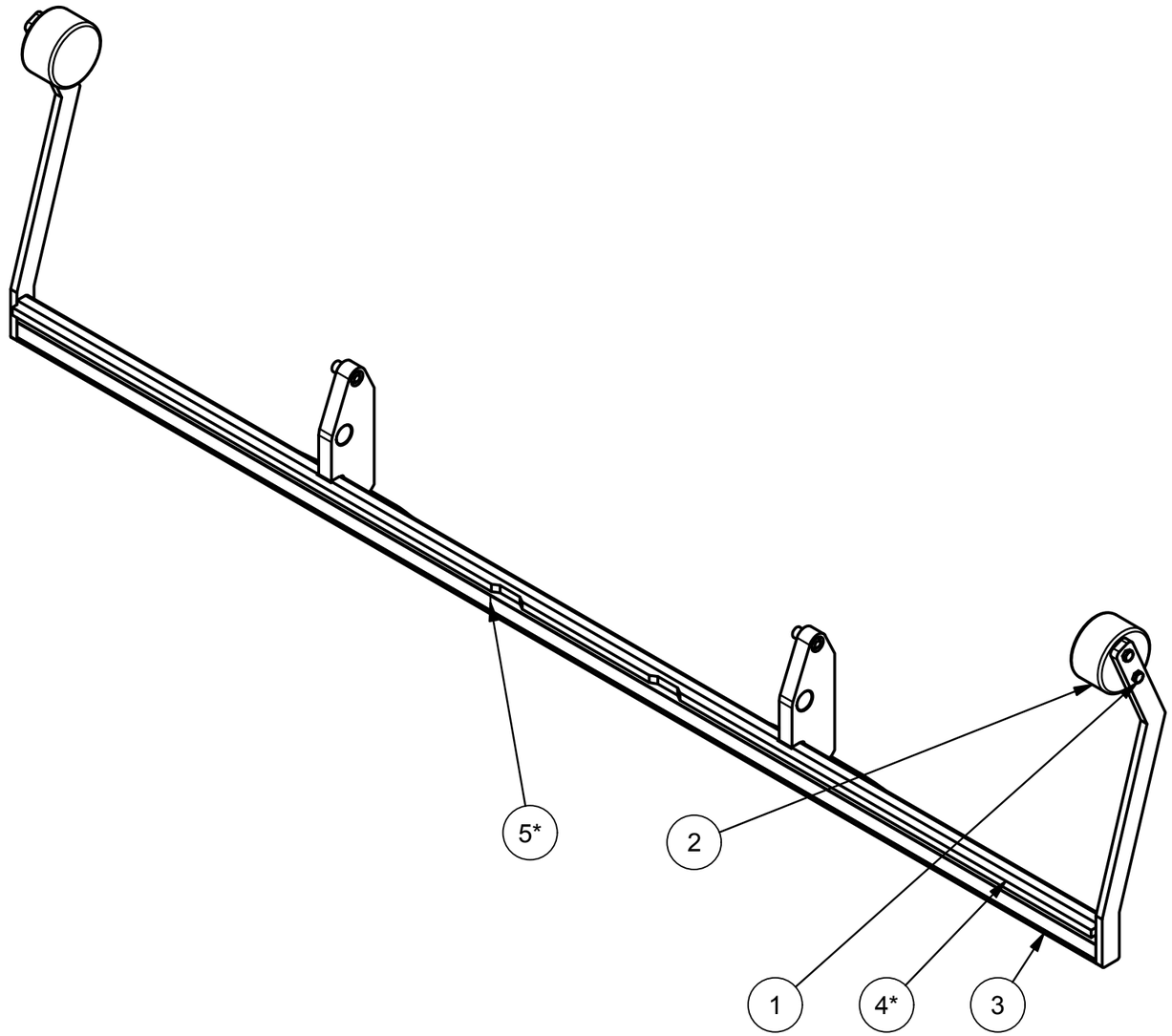
DWG NO.: MA265-0010 C

SCALE: N/A | DATE: 11/2/2018 | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108677C1	1/4-20 X 1 LNG HEX HEAD CAP SCREW, S/S	4
2	76103701A	COUNTERWEIGHT FOR BACKUP BAR	2
3	76106901	BACKUP BAR COMPLETE 61-1/2 HOT BAR SEALER	1
4*	79500302	BLACK RUBBER, BAG CLAMP, FRONT	2
5*	79501102	BLACK SEAL BAR RUBBER, 54 HEAD ACTUAL LENGTH 70"	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/24/2018	N.B

* CUT AND POSITION AS NEEDED



FOR BUSHINGS USE:
MA264-0025 STANDARD SET
MA265-0026 USDA DAIRY SET

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

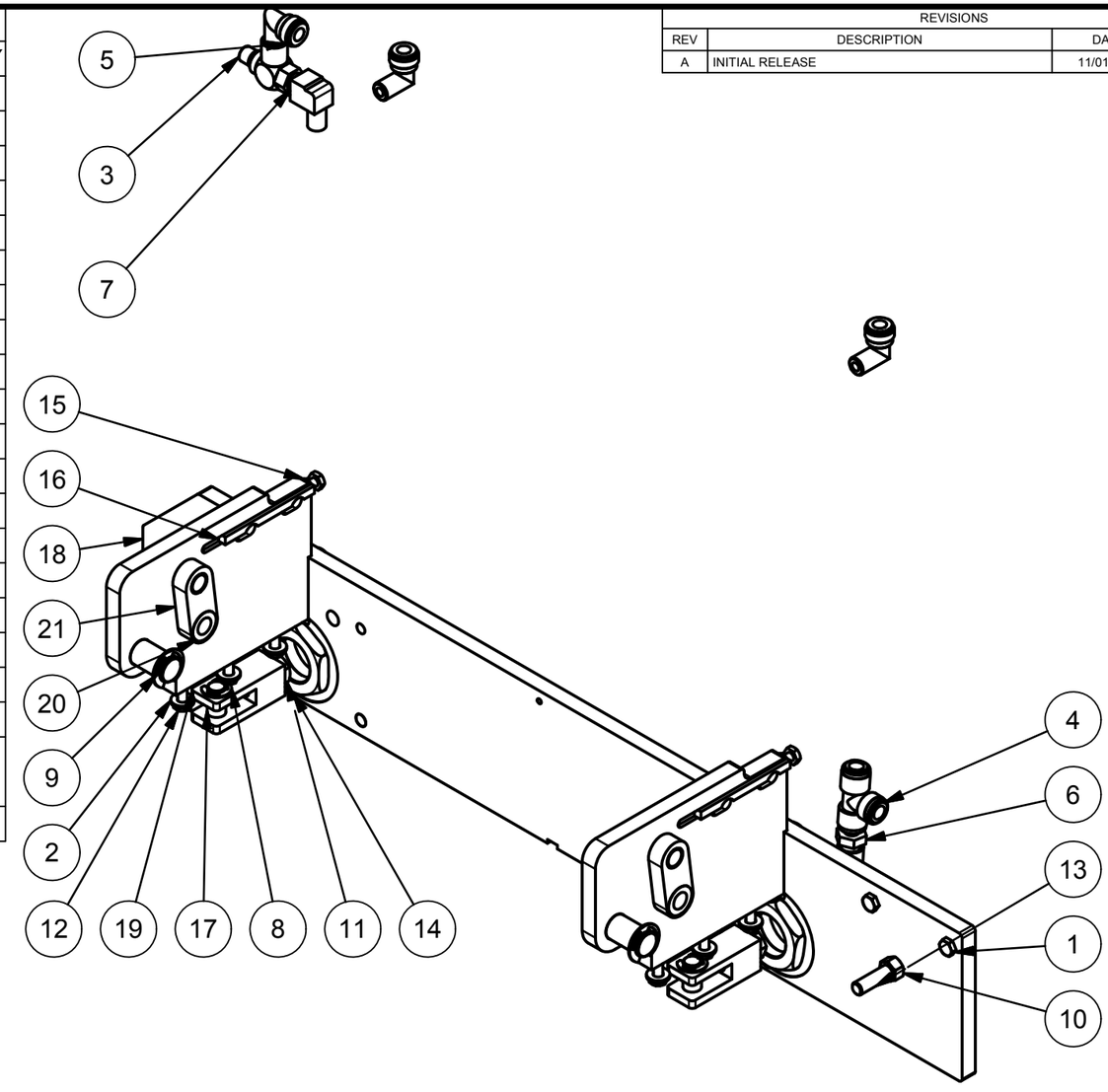
TITLE: MK3 62" MANUAL HOTBAR BACKUP BAR ASSEMBLY

DWG NO.: MA264-0021 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	2
2	110544C1	1/4 FLAT WASHER, 0.630 O.D., 0.08 THCK, S/S	6
3	73501101	1/4 NPT FLOW CONTROL VALVE	2
4	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	1
5	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	3
6	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	1
7	74304401	1/4 STREET ELBOW, EXTRUDED	2
8	75102201	E-ring retainer for 1/2 rod #5133-50H	4
9	75102301	E-RING RETAINER FOR 3/4 ROD	2
10	75104201	3/8-16 HEX NUT, S/S	4
11	75105101	1/2-20 HEX JAM NUT, S/S	2
12	75113401	1/4-28 X 1 LNG HEX HEAD CAP SCREW, S/S	8
13	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	2
14	75117201	1 3/8 - 12 UNF CYLINDER LICK NUT	2
15	75118101	1/4-28 HEX JAM NUT, S/S	2
16	76102401A	KEY, BEARING BLOCK/BUTTRESS	2
17	76102501A	PIN, SEAL BAR CLEVIS	2
18	76110201	FRAME PLATE 30" COMPLETE	1
19	76125301A	SHORT CLEVIS, HEAT SEAL BAR,MACHINED HEAD ESIGN	2
20	79101201	FLANGED BEARING SLEEVE, 1/2ID 19/32 OD 1/2 LONG (LINK & V32)	4
21	86102401A	LINK, PIVOT SHAFT TO BACKUP BAR FOR FLANGED SLEEVES	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/01/2018	N.B



M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE- STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

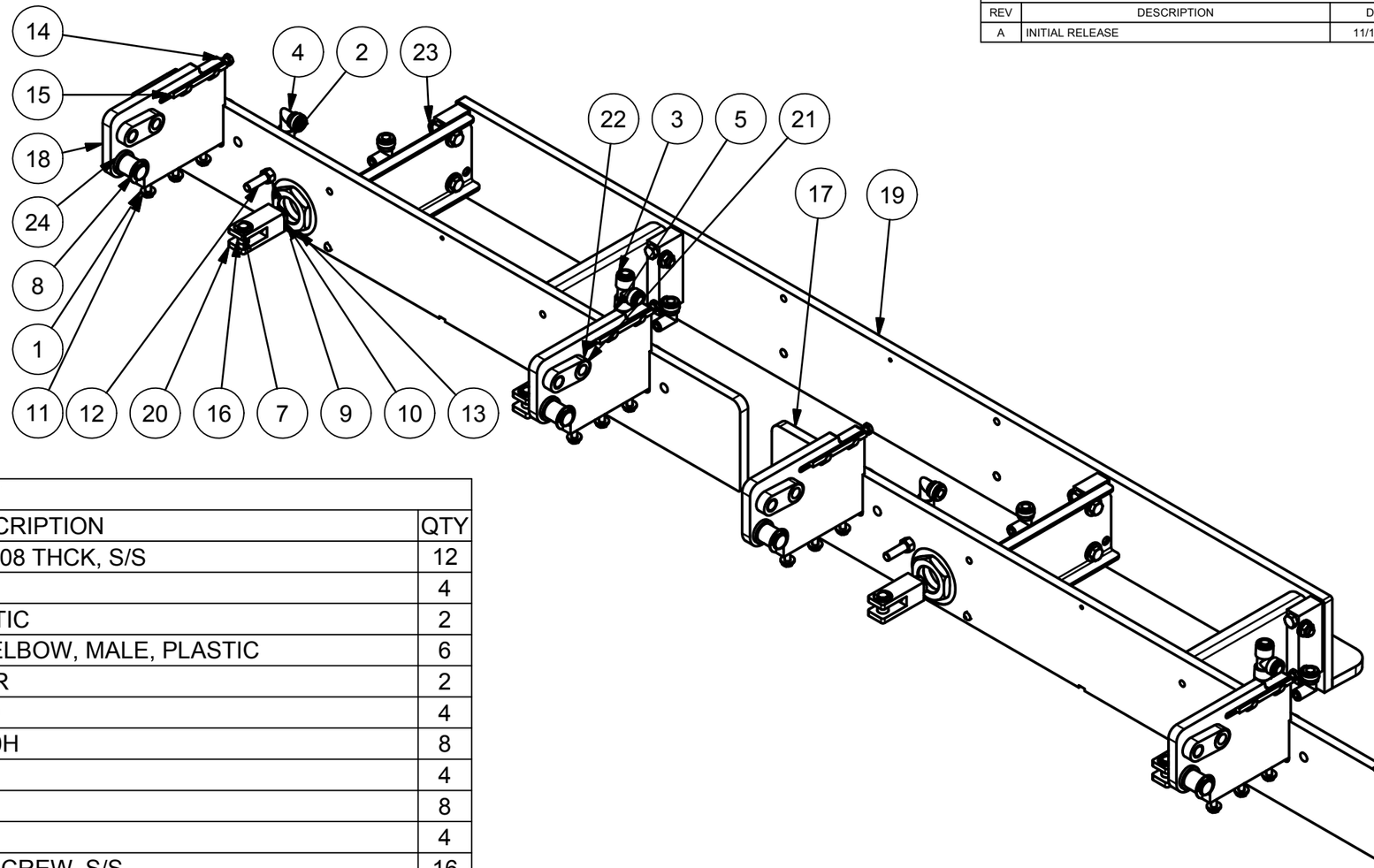
DRAWN BY: C.ILONTA

TITLE: MK3 30 inch HEAD ASSEMBLY BASE

DWG NO.: MA260-0007 A

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/16/2018	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	110544C1	1/4 FLAT WASHER, 0.630 O.D., 0.08 THCK, S/S	12
2	73501101	1/4 NPT FLOW CONTROL VALVE	4
3	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	2
4	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	6
5	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	2
6	74304401	1/4 STREET ELBOW, EXTRUDED	4
7	75102201	E-ring retainer for 1/2 rod #5133-50H	8
8	75102301	E-RING RETAINER FOR 3/4 ROD	4
9	75104201	3/8-16 HEX NUT, S/S	8
10	75105101	1/2-20 HEX JAM NUT, S/S	4
11	75113401	1/4-28 X 1 LNG HEX HEAD CAP SCREW, S/S	16
12	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	4
13	75117201	1 3/8 - 12 UNF CYLINDER LICK NUT	4
14	75118101	1/4-28 HEX JAM NUT, S/S	4
15	76102401A	KEY, BEARING BLOCK/BUTTRESS	4
16	76102501A	PIN, SEAL BAR CLEVIS	4
17	76122001	RH 37.5" FRAME PLATE COMPLETE	1
18	76122101	LEFT HAND FRAME PLATE 37.5 INCH DUAL HEAD	1
19	76122601	HI-LO FRAME SUPPORT PLATE 37.5" DUAL HEAD	1
20	76125301A	SHORT CLEVIS, HEAT SEAL BAR,MACHINED HEAD ESIGN	4
21	79101201	FLANGED BEARING SLEEVE, 1/2ID 19/32 OD 1/2 LONG (LINK & V32)	8
22	86102401A	LINK, PIVOT SHAFT TO BACKUP BAR FOR FLANGED SLEEVES	4
23	MA015-0017	MK3 6.81 20/90 DEG ADAPTER HILO ASM	2
24	MA264-0025	BACKUP BAR BRONZE BUSHING SET	2

M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

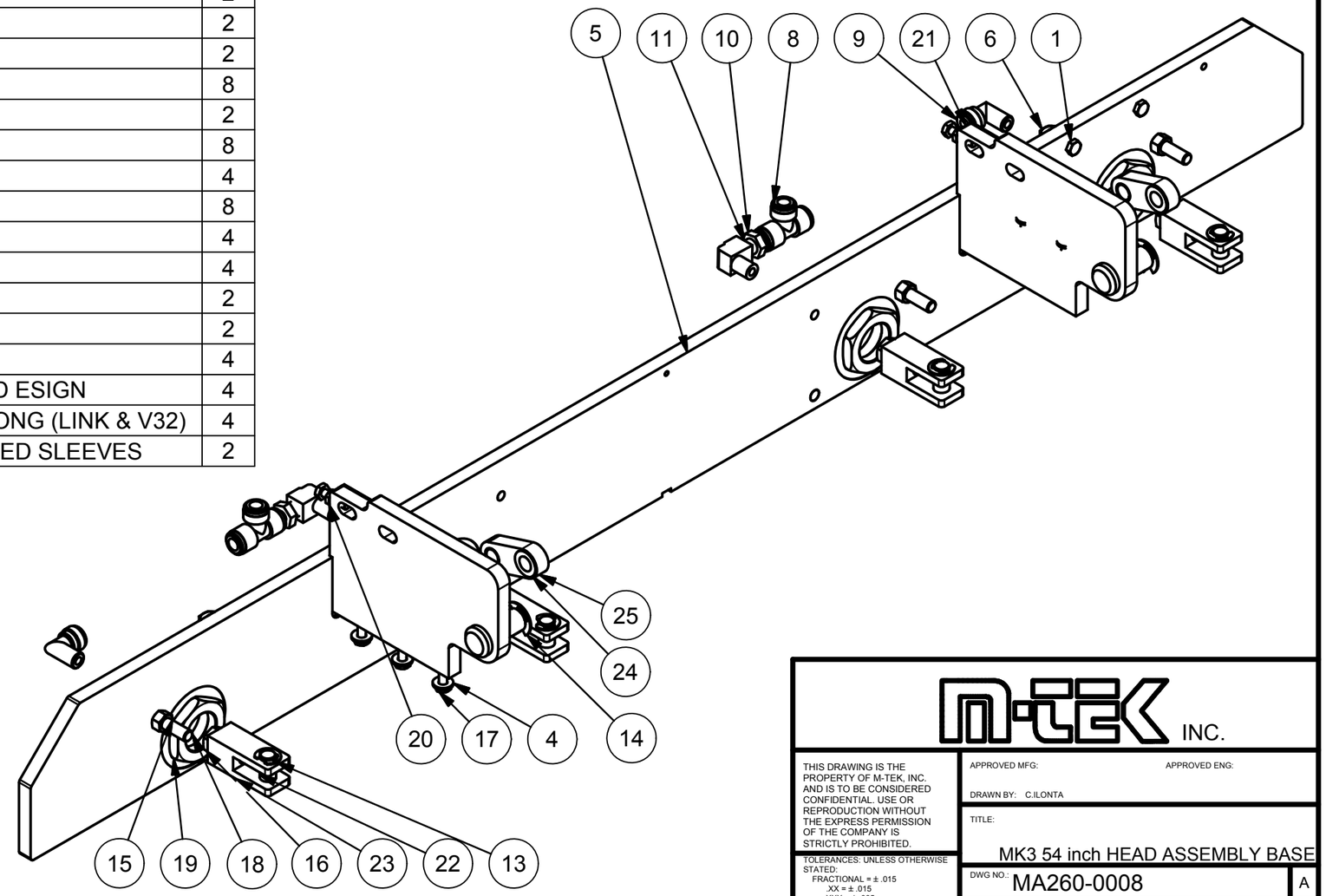
TITLE: MK3 37.5 DUAL HEAD ASSEMBLY BASE

DWG NO.: MA260-0010 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	2
2	108677C1	1/4-20 X 1 LNG HEX HEAD CAP SCREW, S/S	4
3	108679C1	Ø1/4 X 1 DOWEL PIN, S/S	4
4	110544C1	1/4 FLAT WASHER, 0.630 O.D., 0.08 THCK, S/S	10
5	125477C1	FRAME PLATE 54 COMPLETE NEW	1
6	73501101	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
7	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	4
8	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	2
9	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	2
10	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	2
11	74304401	1/4 STREET ELBOW, EXTRUDED	2
12	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS	2
13	75102201	E-ring retainer for 1/2 rod #5133-50H	8
14	75102301	E-RING RETAINER FOR 3/4 ROD	2
15	75104201	3/8-16 HEX NUT, S/S	8
16	75105101	1/2-20 HEX JAM NUT, S/S	4
17	75113401	1/4-28 X 1 LNG HEX HEAD CAP SCREW, S/S	8
18	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	4
19	75117201	1 3/8 - 12 UNF CYLINDER LICK NUT	4
20	75118101	1/4-28 HEX JAM NUT, S/S	2
21	76102401A	KEY, BEARING BLOCK/BUTTRESS	2
22	76102501A	PIN, SEAL BAR CLEVIS	4
23	76125301A	SHORT CLEVIS, HEAT SEAL BAR,MACHINED HEAD ESIGN	4
24	79101201	FLANGED BEARING SLEEVE, 1/2ID 19/32 OD 1/2 LONG (LINK & V32)	4
25	86102401A	LINK, PIVOT SHAFT TO BACKUP BAR FOR FLANGED SLEEVES	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/01/2018	CI



M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 54 inch HEAD ASSEMBLY BASE

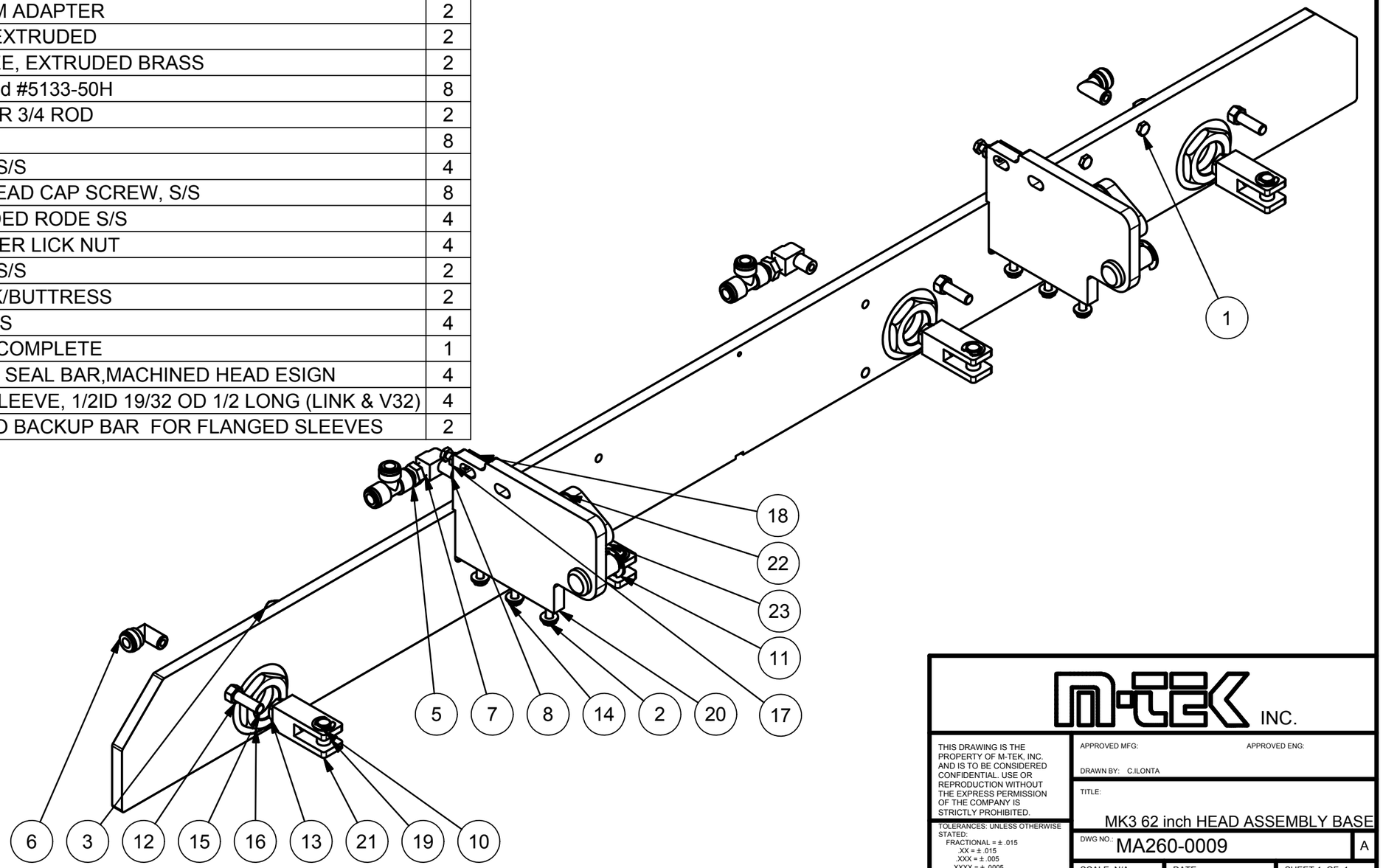
DWG NO.: MA260-0008 A

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/01/2018	CI

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	2
2	110544C1	1/4 FLAT WASHER, 0.630 O.D., 0.08 THCK, S/S	6
3	73501101	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
4	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	4
5	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	2
6	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	2
7	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	2
8	74304401	1/4 STREET ELBOW, EXTRUDED	2
9	74305901	1/4 NPT MALE RUN TEE, EXTRUDED BRASS	2
10	75102201	E-ring retainer for 1/2 rod #5133-50H	8
11	75102301	E-RING RETAINER FOR 3/4 ROD	2
12	75104201	3/8-16 HEX NUT, S/S	8
13	75105101	1/2-20 HEX JAM NUT, S/S	4
14	75113401	1/4-28 X 1 LNG HEX HEAD CAP SCREW, S/S	8
15	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	4
16	75117201	1 3/8 - 12 UNF CYLINDER LICK NUT	4
17	75118101	1/4-28 HEX JAM NUT, S/S	2
18	76102401A	KEY, BEARING BLOCK/BUTTRESS	2
19	76102501A	PIN, SEAL BAR CLEVIS	4
20	76106701	FRAME PLATE 61-1/2 COMPLETE	1
21	76125301A	SHORT CLEVIS, HEAT SEAL BAR,MACHINED HEAD ESIGN	4
22	79101201	FLANGED BEARING SLEEVE, 1/2ID 19/32 OD 1/2 LONG (LINK & V32)	4
23	86102401A	LINK, PIVOT SHAFT TO BACKUP BAR FOR FLANGED SLEEVES	2



M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 62 inch HEAD ASSEMBLY BASE

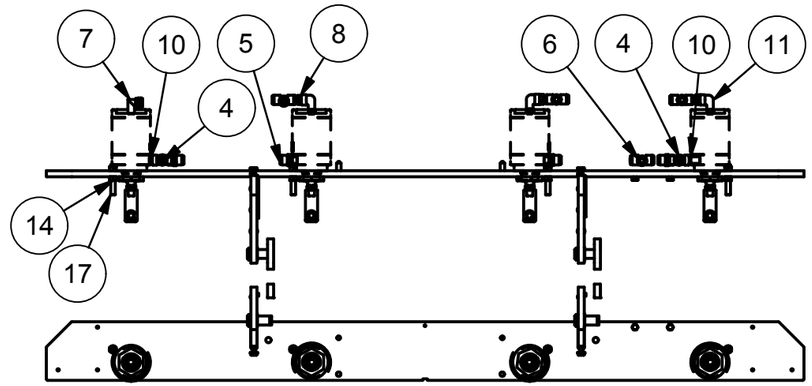
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

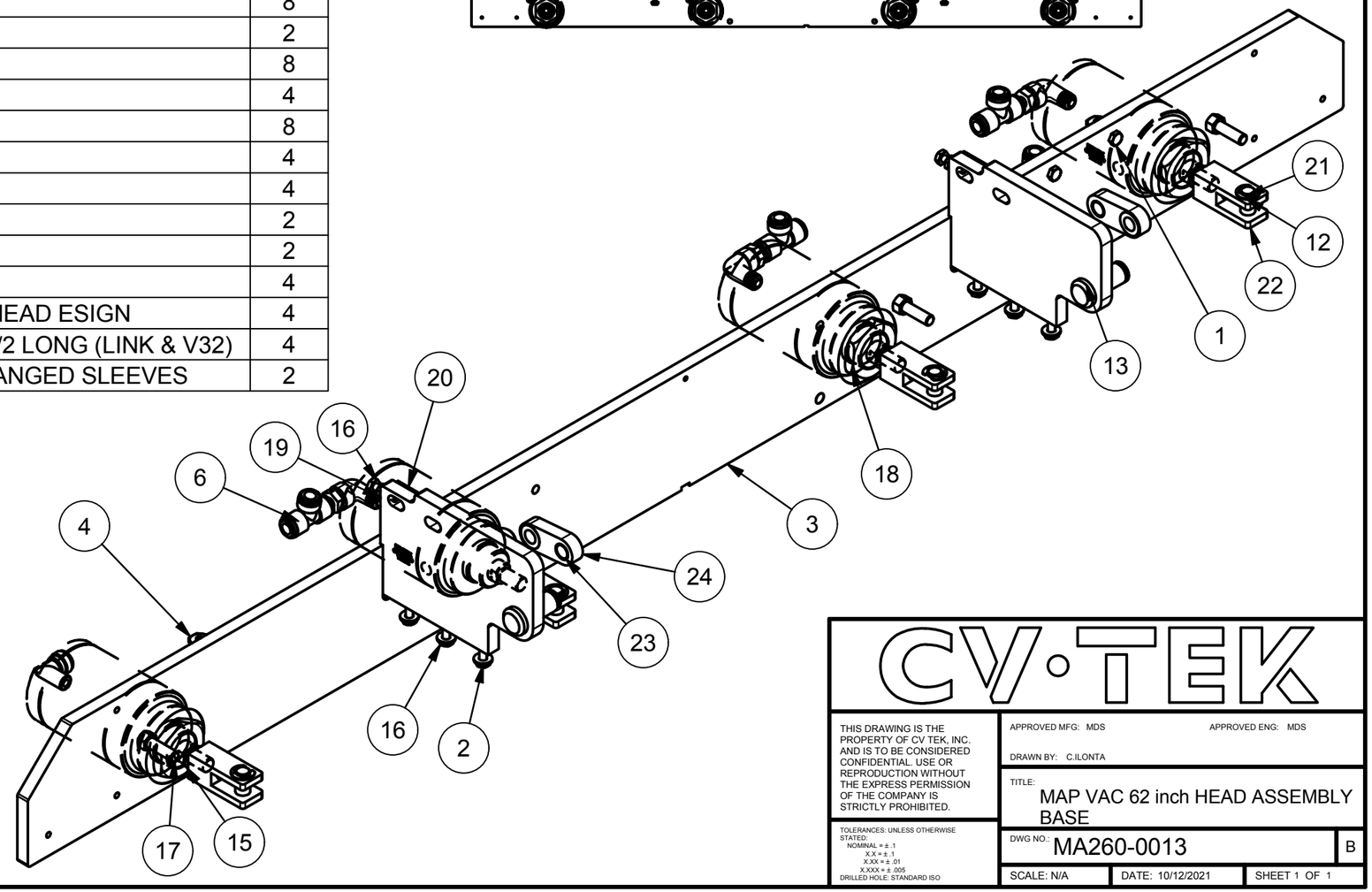
DWG NO.: MA260-0009 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	2
2	110544C1	1/4 FLAT WASHER, 0.630 O.D., 0.08 THCK, S/S	6
3	130276C1	MAP VAC FRAME PLATE 62 COMPLETE	1
4	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
5	74203001	3/8 OD TUBE x 1/4 NPT MALE CONNECTOR, PLASTIC	4
6	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	4
7	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	1
8	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	3
9	74400501	1/4 NPT FEMALE TEE S/S	2
10	74400601	1/4 CLOSE NIPPLE S/S	2
11	74400701	1/4 NPT 90 Deg. STREET ELBOW S/S	3
12	75102201	E-ring retainer for 1/2 rod #5133-50H	8
13	75102301	E-RING RETAINER FOR 3/4 ROD	2
14	75104201	3/8-16 HEX NUT, S/S	8
15	75105101	1/2-20 HEX JAM NUT, S/S	4
16	75113401	1/4-28 X 1 LNG HEX HEAD CAP SCREW, S/S	8
17	75116501	3/8-16 X 2 1/2 THREADED RODE S/S	4
18	75117201	1 3/8 - 12 UNF CYLINDER LICK NUT	4
19	75118101	1/4-28 HEX JAM NUT, S/S	2
20	76102401A	KEY, BEARING BLOCK/BUTTRESS	2
21	76102501A	PIN, SEAL BAR CLEVIS	4
22	76125301A	SHORT CLEVIS, HEAT SEAL BAR,MACHINED HEAD ESIGN	4
23	79101201	FLANGED BEARING SLEEVE, 1/2ID 19/32 OD 1/2 LONG (LINK & V32)	4
24	86102401A	LINK, PIVOT SHAFT TO BACKUP BAR FOR FLANGED SLEEVES	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/01/2018	CI
B	CYLINDERS SHOWN AS REFERENCE, 74204601 QTY 3, 74400601 QTY 2, 74203501 QTY 4	11/5/2024	SP





NOTE: AIR CYLINDERS SHOWN AS REFERENCE

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: MDS APPROVED ENG: MDS

DRAWN BY: C.ILONTA

TITLE: MAP VAC 62 inch HEAD ASSEMBLY BASE

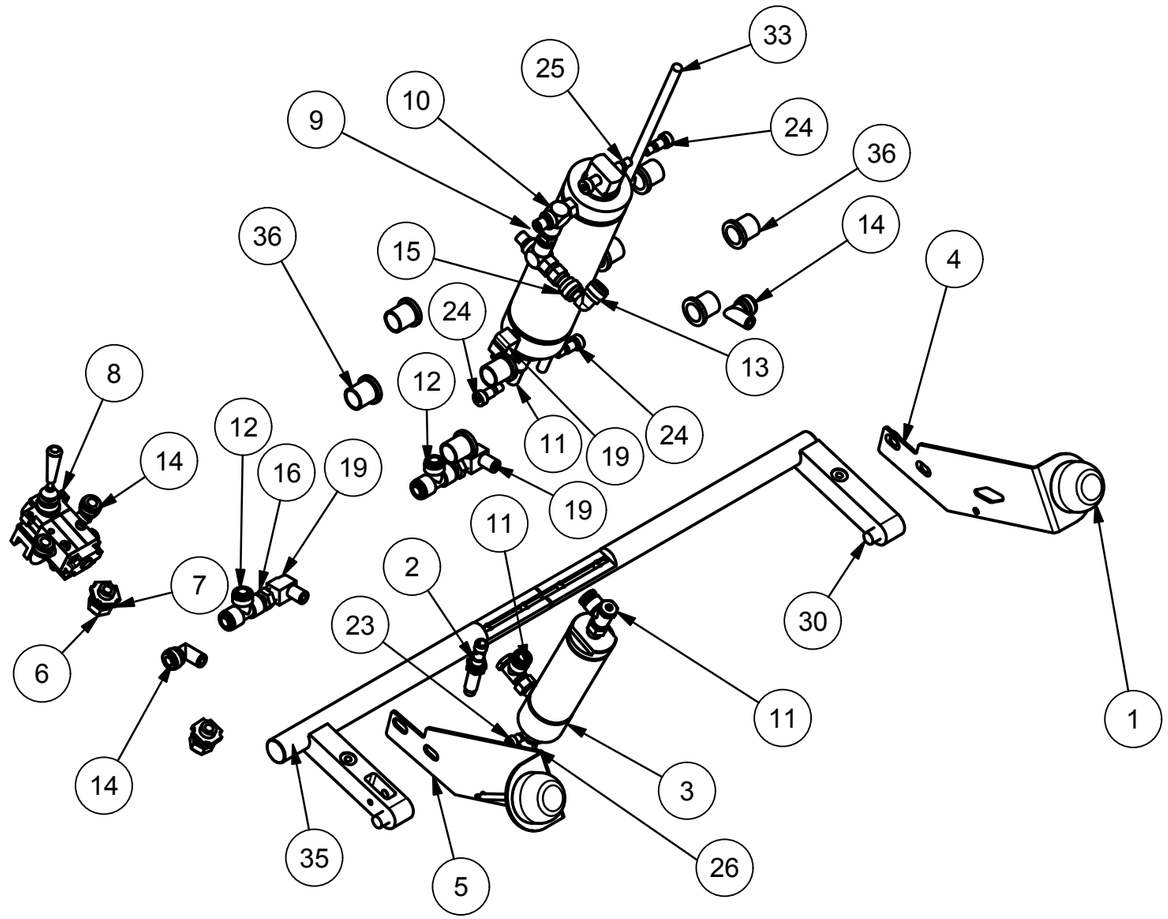
DWG NO.: MA260-0013 B

SCALE: N/A DATE: 10/12/2021 SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	0210-3491	BANNER K50 CAPACITIVE BUTTON	2
2	126048C1	M12 SAFETY PROX	1
3	128566C1	M19733; 1-3/4" bore, Stainless Custom cylinder	1
4	129308C1	RH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1
5	129310C1	LH SWITCH BRACKET, AUTO JAW CLOSER CONTROL	1
6	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	2
7	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	2
8	73101501	Schrader Bellows joystick control valve, with internal spring	1
9	73200301	CYLINDER, HI-LO HEAD	1
10	73501101	1/4 NPT FLOW CONTROL VALVE	2
11	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
12	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	2
13	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
14	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	4
15	74204301	3/8 OD TUBE x 1/4 NPT FEMALE CONNECTOR, PLASTIC	1
16	74204601	3/8 OD x 1/4 NPT STEM ADAPTER	2
17	74300101	1/4 NPT BREATHER VENT	2
18	74303701	1/4 NPT hex nipple - long	1
19	74304401	1/4 STREET ELBOW, EXTRUDED	3
20	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1
21	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	2
22	75104201	3/8-16 HEX NUT, S/S	1
23	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
24	75104701	Ø3/8 X 1/2 SOCKET HEAD SHOULDER SCREW, S/S	3
25	75104801	Ø3/8 X 1-3/4 SOCKET HEAD SHOULDER SCREW, S/S	1
26	75111401	7/16-20 HEX JAM NUT, S/S	1
27	75111501	FIN SEAL BAR SHOULDER BOLT	1
28	75118601	#10-32 HEX NUT, S/S	2
29	75119301H	#10-32 X 1-1/2 PAN HEAD, SLOTTED, S/S	2
30	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1
31	76109201A	ROD STOP NUT FOR HI-LO HEAD	1
32	76109701A	JOYSTICK MTG. BRACKET	1
33	76118201A	THREADED ROD FOR HI-LO HEAD	1
34	76118501A	CLEVIS, JAW CLOSER CYLINDER	1
35	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1
36	79100101	BUSHING, BRONZE 3/4 ID X 7/8 OD	8
37	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	03/02/2023	N.B
B	ADDED 74204601 & 74203501	10/31/2024	RB



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

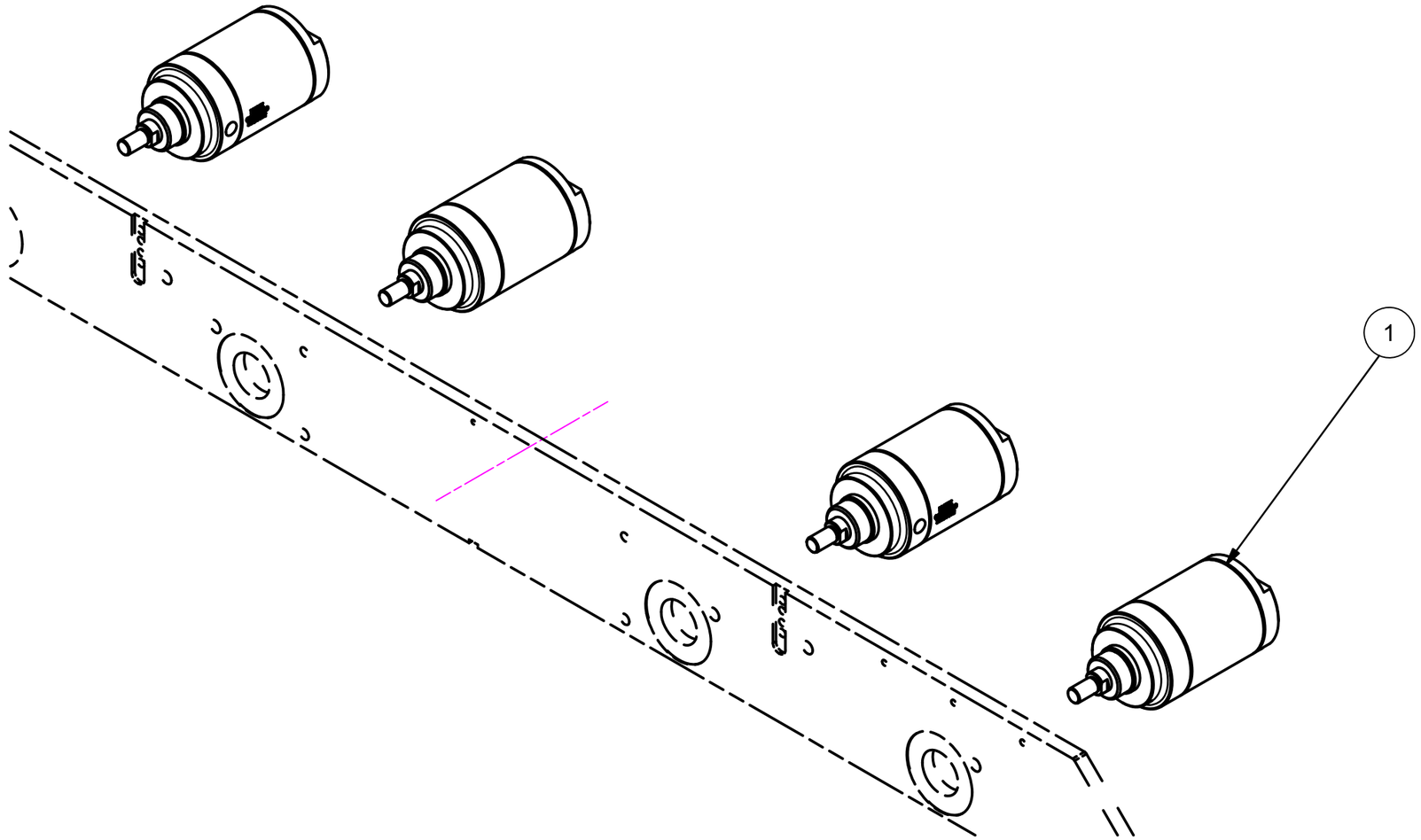
DRAWN BY: rowdy

TITLE: MK3 54IN HEAD REBUILD ASSEMBLY AUTO

DWG NO.: MA260-0014 B

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	INITIAL RELEASE		N.B



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	73200102	CUST. LG BORE CYL w/SPEC. ROD GUIDE FOR 50 SER. (SEAL BAR)	4

CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 54/62 SEAL BAR LARGE BORE CYLINDERS 4X

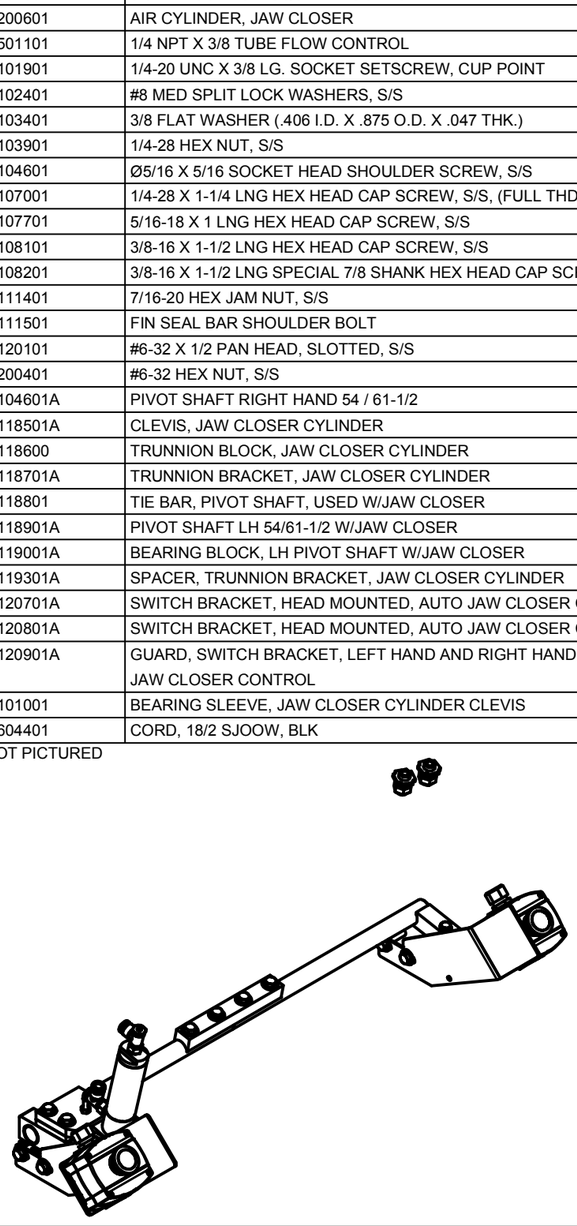
DWG NO.: MK3 and MapVac Cylinder | A

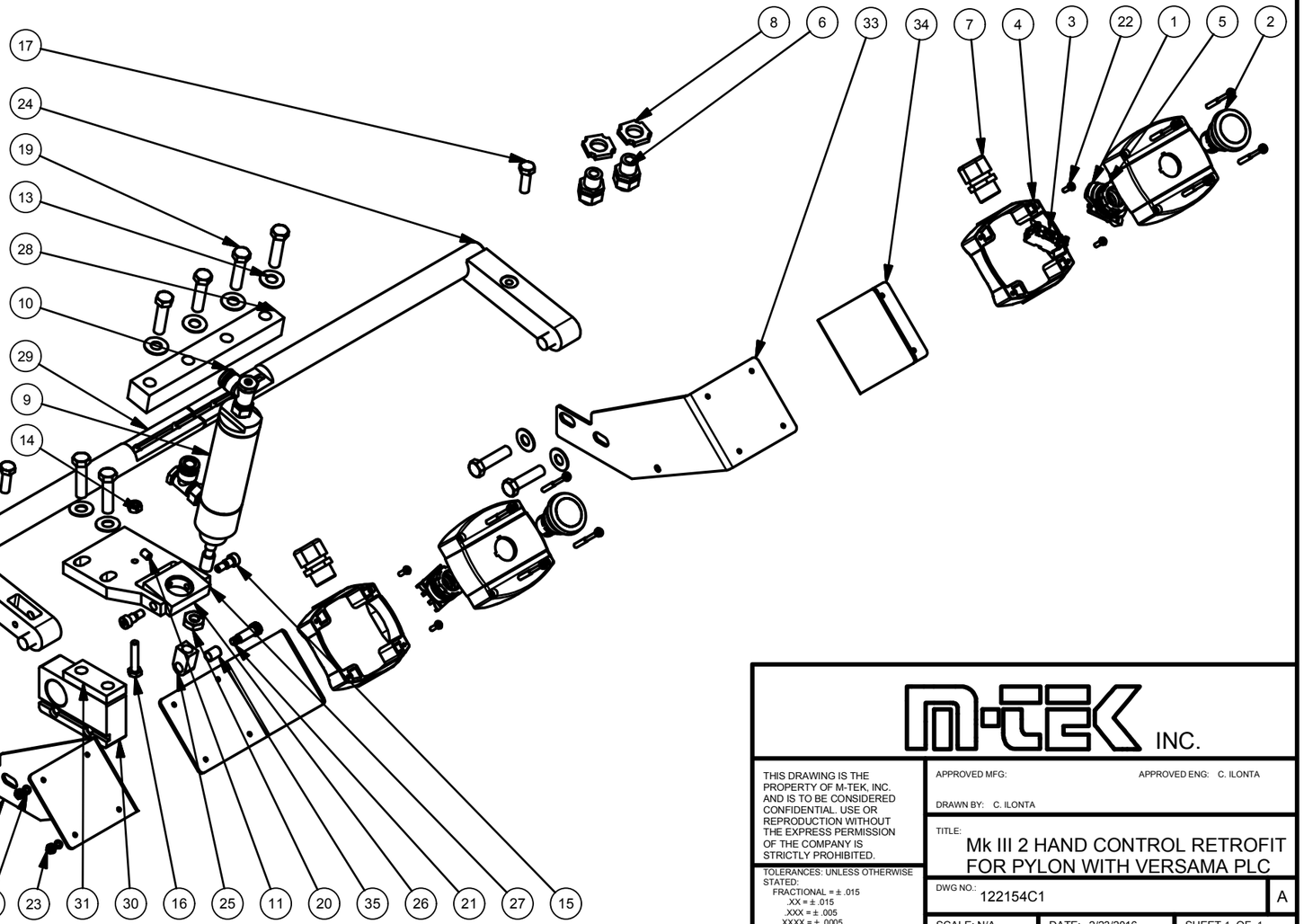
SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	71106102	LATCH, 22mm 3 ACROSS	2
2	71113901	GREEN PUSH BUTTON 40mm MUSHROOM HEAD W/LATCH	2
3	71114001	CONTACT BLOCK N.O.	2
4	71301201	ENLCOSURE, PLASTIC YELLOW PUSH BUTTON	2
5	71601401	1/2 NPT SELING NUT	2
6	71605001	CORD GRIP GREY 3/8 NPT STANDARD DIAMETER GROMMENT	2
7	71605101	.20-.35 DIA. CORD GRIP, 1/2 NPT	2
8	71607301	3/8 NPT CONDUIT SQUARE LOCKNUT	2
9	73200601	AIR CYLINDER, JAW CLOSER	1
10	73501101	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
11	75101901	1/4-20 UNC X 3/8 LG. SOCKET SETSCREW, CUP POINT	1
12	75102401	#8 MED SPLIT LOCK WASHERS, S/S	8
13	75103401	3/8 FLAT WASHER (.406 I.D. X .875 O.D. X .047 THK.)	10
14	75103901	1/4-28 HEX NUT, S/S	1
15	75104601	Ø5/16 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
16	75107001	1/4-28 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	1
17	75107701	5/16-18 X 1 LNG HEX HEAD CAP SCREW, S/S	2
18	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	6
19	75108201	3/8-16 X 1-1/2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	4
20	75111401	7/16-20 HEX JAM NUT, S/S	1
21	75111501	FIN SEAL BAR SHOULDER BOLT	1
22	75120101	#6-32 X 1/2 PAN HEAD, SLOTTED, S/S	8
23	75200401	#6-32 HEX NUT, S/S	8
24	76104601A	PIVOT SHAFT RIGHT HAND 54 / 61-1/2	1
25	76118501A	CLEVIS, JAW CLOSER CYLINDER	1
26	76118600	TRUNNION BLOCK, JAW CLOSER CYLINDER	1
27	76118701A	TRUNNION BRACKET, JAW CLOSER CYLINDER	1
28	76118801	TIE BAR, PIVOT SHAFT, USED W/JAW CLOSER	1
29	76118901A	PIVOT SHAFT LH 54/61-1/2 W/JAW CLOSER	1
30	76119001A	BEARING BLOCK, LH PIVOT SHAFT W/JAW CLOSER	1
31	76119301A	SPACER, TRUNNION BRACKET, JAW CLOSER CYLINDER	1
32	76120701A	SWITCH BRACKET, HEAD MOUNTED, AUTO JAW CLOSER CONTROLI, LH	1
33	76120801A	SWITCH BRACKET, HEAD MOUNTED, AUTO JAW CLOSER CONTROLI, RH	1
34	76120901A	GUARD, SWITCH BRACKET, LEFT HAND AND RIGHT HAND, HEAD MOUNTED AUTO JAW CLOSER CONTROL	2
35	79101001	BEARING SLEEVE, JAW CLOSER CYLINDER CLEVIS	1
36*	71604401	CORD, 18/2 SJOOW, BLK	14 ft

* NOT PICTURED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	02/23/2016	N.B





M-TEK INC.

APPROVED MFG: APPROVED ENG: C. ILONTA

DRAWN BY: C. ILONTA

TITLE: Mk III 2 HAND CONTROL RETROFIT FOR PYLON WITH VERSAMA PLC

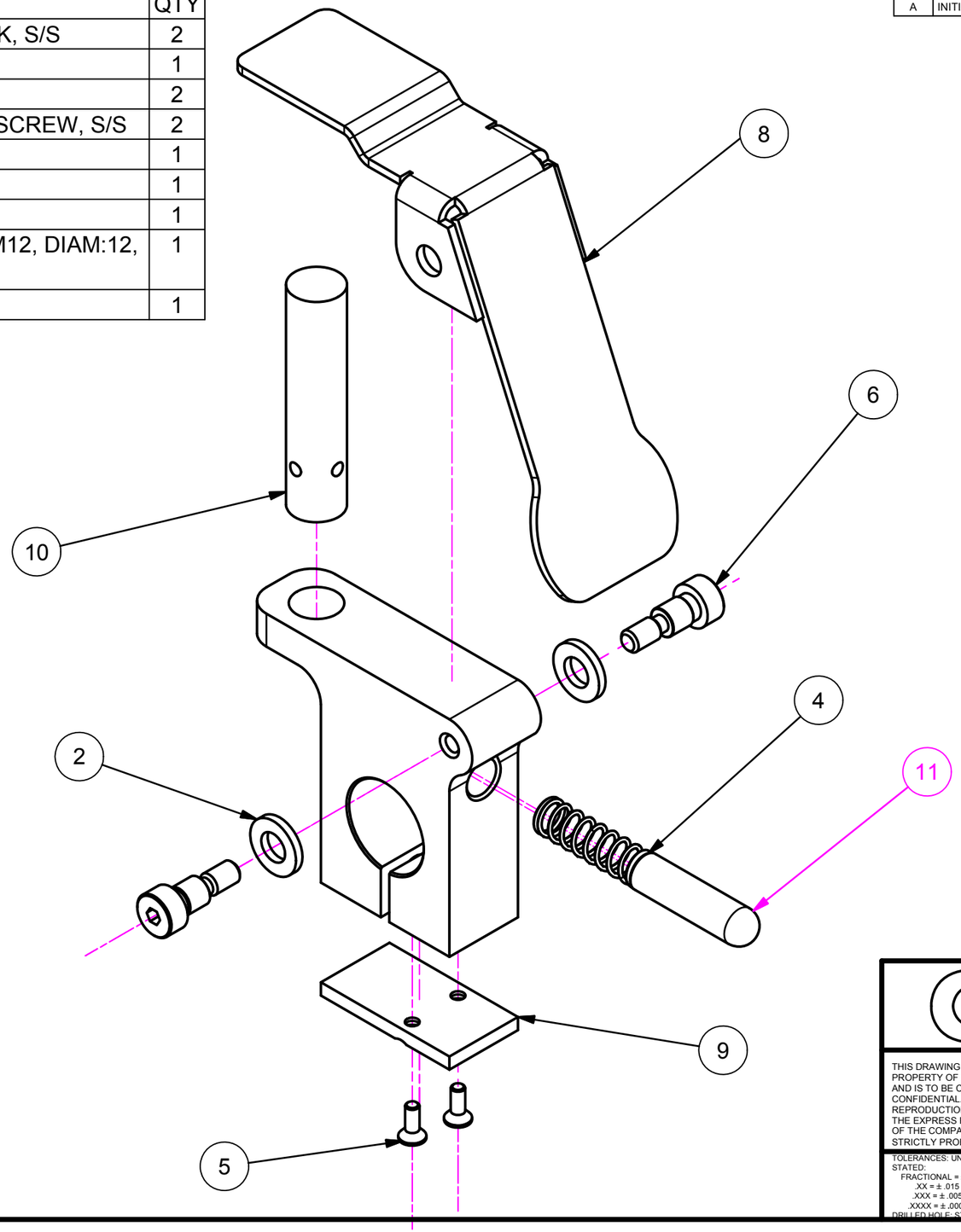
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: 122154C1 A

SCALE: N/A DATE: 2/23/2016 SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
2	75110201	1/4 FLAT WASHER, 0.500 O.D., 0.07 THCK, S/S	2
4	75117701	SPRING	1
5	75117801	#4-40 X 5/16 FLAT HEAD, SOCKET, S/S	2
6	75117901	Ø1/4 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
7	76126401A	CYLINDER SUPPORT BLOCK	1
8	76126701A	Bag Stretcher Arm	1
9	79102501A	RUB BLOCK	1
10	121795C1	INDUCTIVE PROXIMITY SWITCH, NPN, M12, DIAM:12, THREADED M12X1	1
11	76127001	Pivot Spring Pin Bag Stretcher	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B



NOTES:
FINISH:
BREAK & DEBURR ALL EDGES & CORNERS
MATERIAL:
STOCK: , SEE BOM
MASS: N/A
PARENT ASSY. NUMBER:
FINISHED PART:

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: admin

TITLE: BAG STRETCHER

DWG NO.: 122673C1

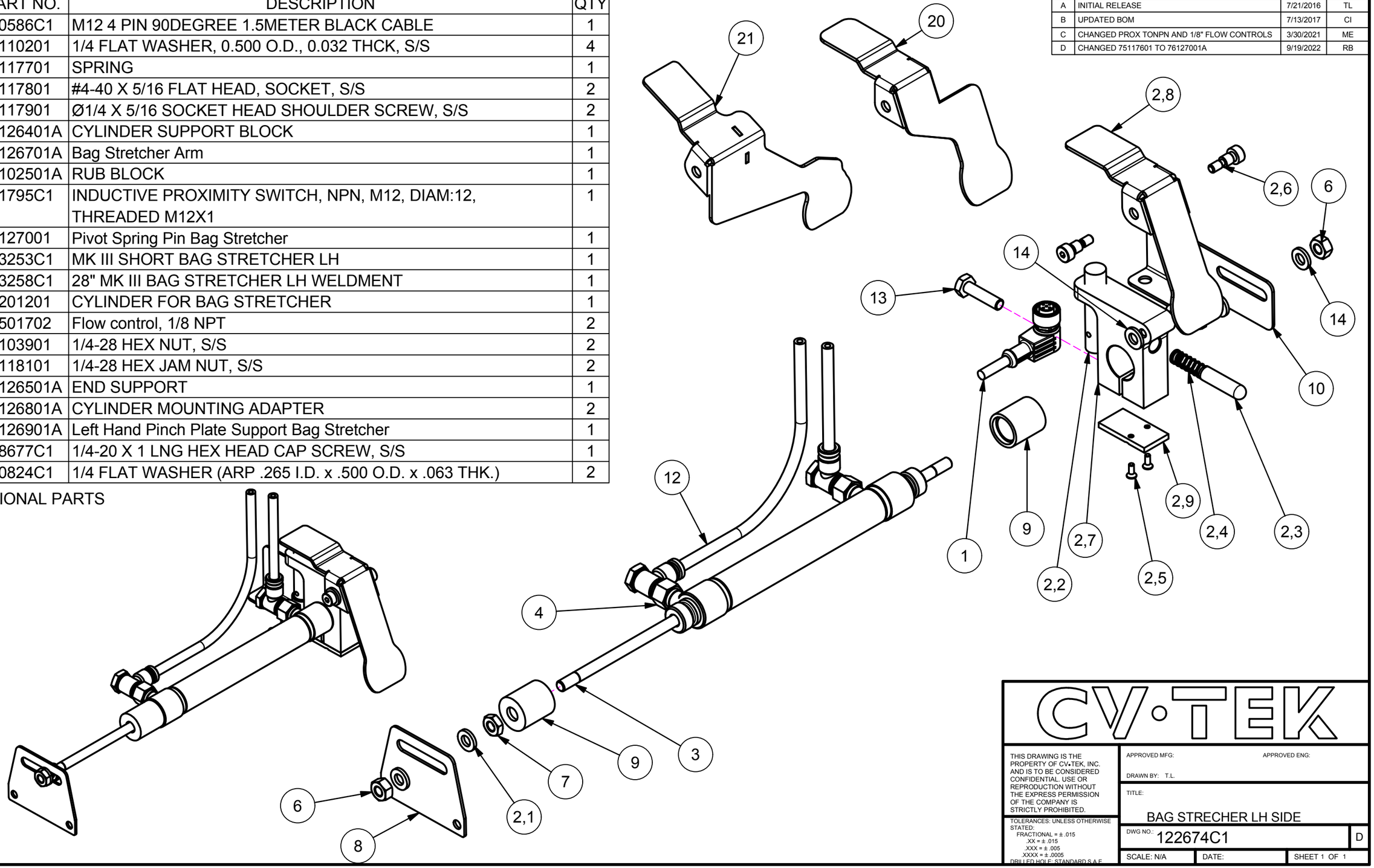
SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	120586C1	M12 4 PIN 90DEGREE 1.5METER BLACK CABLE	1
2,1	75110201	1/4 FLAT WASHER, 0.500 O.D., 0.032 THCK, S/S	4
2,4	75117701	SPRING	1
2,5	75117801	#4-40 X 5/16 FLAT HEAD, SOCKET, S/S	2
2,6	75117901	Ø1/4 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
2,7	76126401A	CYLINDER SUPPORT BLOCK	1
2,8	76126701A	Bag Stretcher Arm	1
2,9	79102501A	RUB BLOCK	1
2,2	121795C1	INDUCTIVE PROXIMITY SWITCH, NPN, M12, DIAM:12, THREADED M12X1	1
2,3	76127001	Pivot Spring Pin Bag Stretcher	1
20*	123253C1	MK III SHORT BAG STRETCHER LH	1
21*	123258C1	28" MK III BAG STRETCHER LH WELDMENT	1
3	73201201	CYLINDER FOR BAG STRETCHER	1
4	73501702	Flow control, 1/8 NPT	2
6	75103901	1/4-28 HEX NUT, S/S	2
7	75118101	1/4-28 HEX JAM NUT, S/S	2
8	76126501A	END SUPPORT	1
9	76126801A	CYLINDER MOUNTING ADAPTER	2
10	76126901A	Left Hand Pinch Plate Support Bag Stretcher	1
13	108677C1	1/4-20 X 1 LNG HEX HEAD CAP SCREW, S/S	1
14	110824C1	1/4 FLAT WASHER (ARP .265 I.D. x .500 O.D. x .063 THK.)	2

* OPTIONAL PARTS

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/21/2016	TL
B	UPDATED BOM	7/13/2017	CI
C	CHANGED PROX TONPN AND 1/8" FLOW CONTROLS	3/30/2021	ME
D	CHANGED 75117601 TO 76127001A	9/19/2022	RB



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

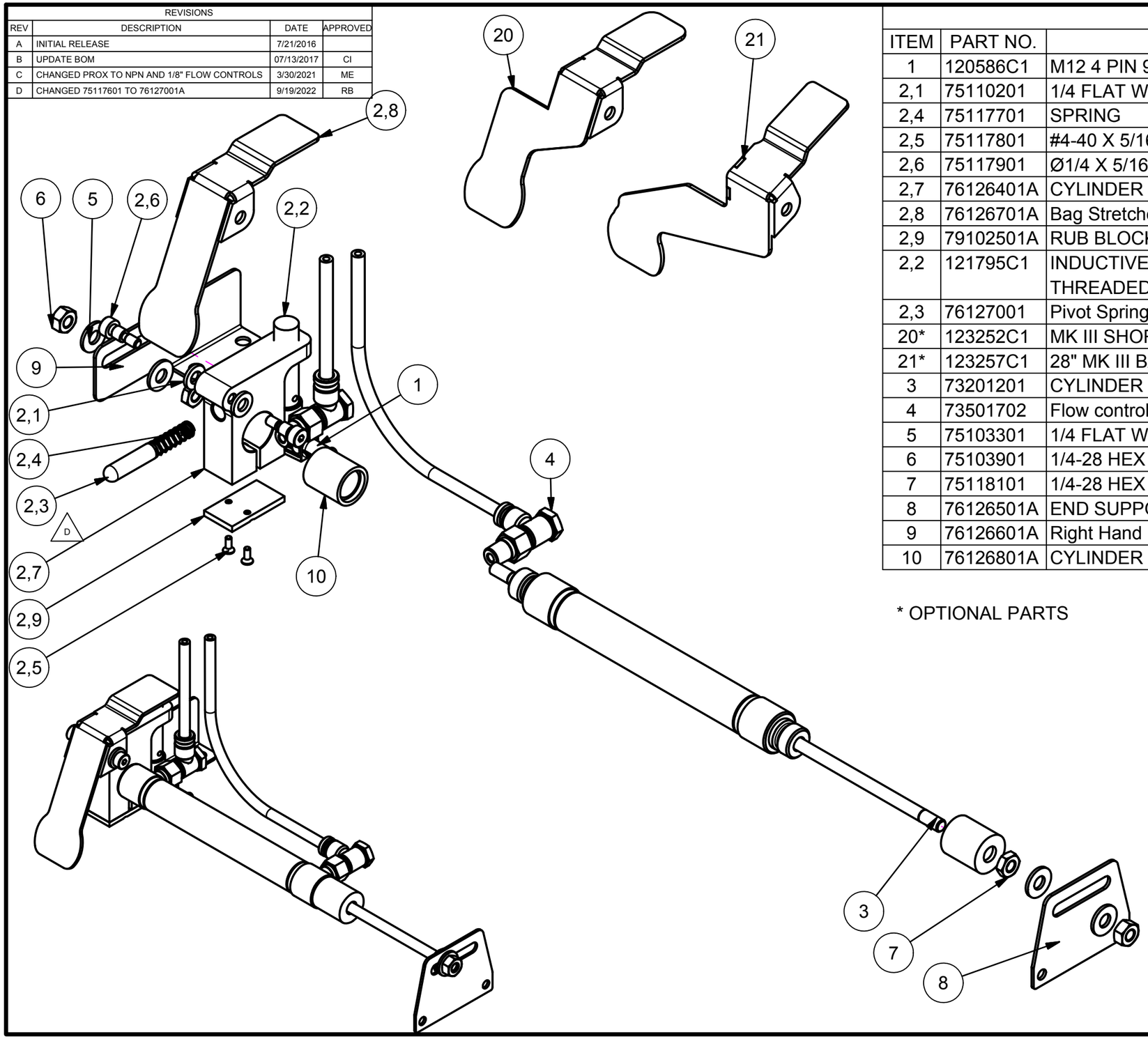
DRAWN BY: T.L.

TITLE: BAG STRECHER LH SIDE

DWG NO.: 122674C1 D

SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/21/2016	
B	UPDATE BOM	07/13/2017	CI
C	CHANGED PROX TO NPN AND 1/8" FLOW CONTROLS	3/30/2021	ME
D	CHANGED 75117601 TO 76127001A	9/19/2022	RB



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120586C1	M12 4 PIN 90DEGREE 1.5METER BLACK CABLE	1
2,1	75110201	1/4 FLAT WASHER, 0.500 O.D., 0.07 THCK, S/S	2
2,4	75117701	SPRING	1
2,5	75117801	#4-40 X 5/16 FLAT HEAD, SOCKET, S/S	2
2,6	75117901	Ø1/4 X 5/16 SOCKET HEAD SHOULDER SCREW, S/S	2
2,7	76126401A	CYLINDER SUPPORT BLOCK	1
2,8	76126701A	Bag Stretcher Arm	1
2,9	79102501A	RUB BLOCK	1
2,2	121795C1	INDUCTIVE PROXIMITY SWITCH, NPN, M12, DIAM:12, THREADED M12X1	1
2,3	76127001	Pivot Spring Pin Bag Stretcher	1
20*	123252C1	MK III SHORT BAG STRETCHER RH	1
21*	123257C1	28" MK III BAG STRETCHER RH WELDMENT	1
3	73201201	CYLINDER FOR BAG STRETCHER	1
4	73501702	Flow control, 1/8 NPT	2
5	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	4
6	75103901	1/4-28 HEX NUT, S/S	2
7	75118101	1/4-28 HEX JAM NUT, S/S	2
8	76126501A	END SUPPORT	1
9	76126601A	Right Hand Pinch Plate Support Bag Stretcher	1
10	76126801A	CYLINDER MOUNTING ADAPTER	2

* OPTIONAL PARTS

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: T. Liakopoulos

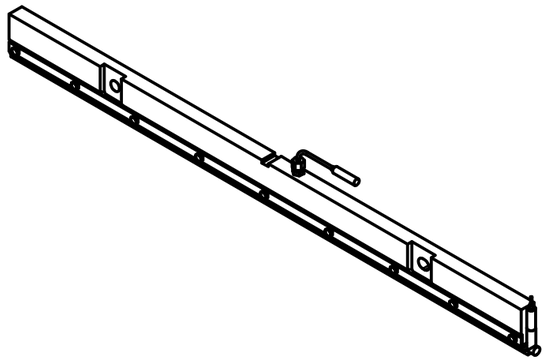
TITLE: BAG STRECHER RH SIDE

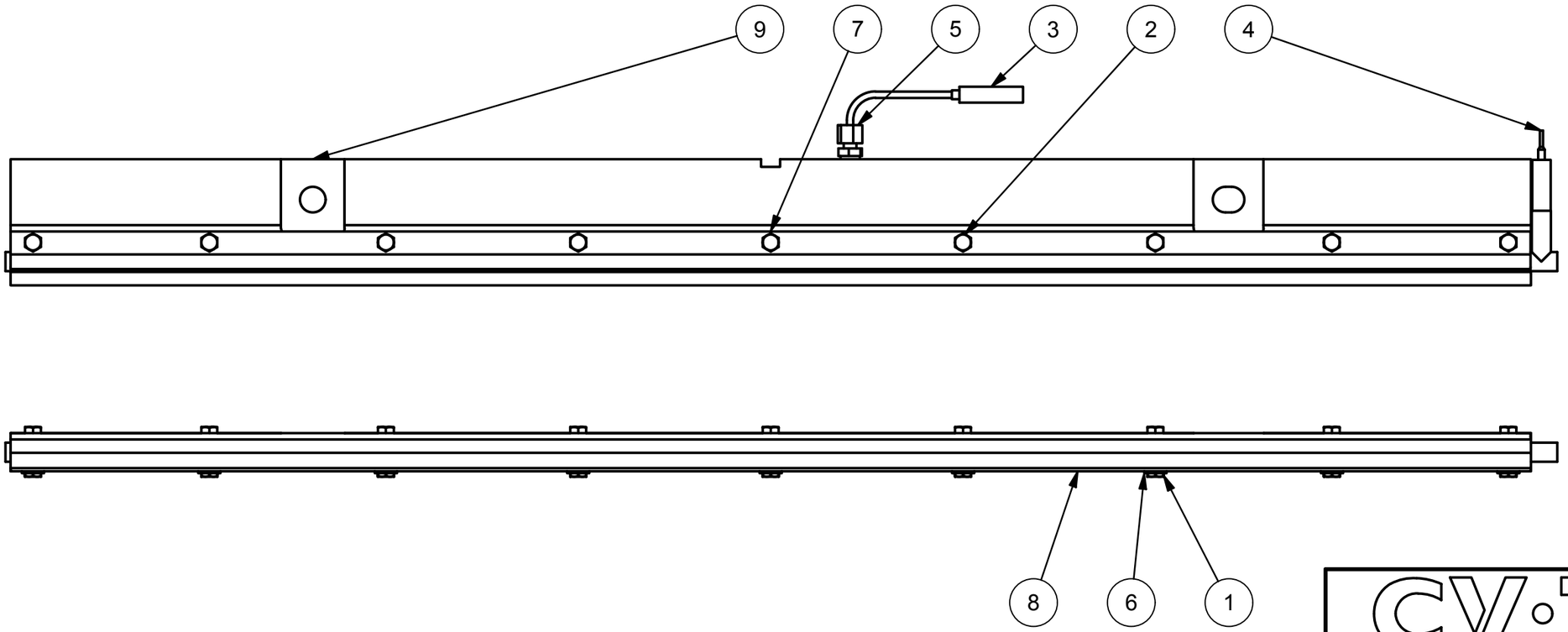
DWG NO.: 122675C1 C

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	9
2	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	9
3	71000101	THERMOCOUPLE,SPECIAL AF	1
4	71200202	30" HEATER CARTRIDGE W/HEAT SHRINK	1
5	74100101	THERMOCOUPLE COUPLING	1
6	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	9
7	76125701	30 INCH CARTRIDGE RETAINER SS FOR CHISEL FACE; COOL EDGE SEAL BA	1
8	79102201	30 INCH CHISEL FACE COOL EDGE CHISEL FACE; COOL EDGE SEAL BAR	1
9	86106101	CHISEL FACE, COOL EDGE 30 INCH SEAL BAR	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/22/2018	N.B





TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

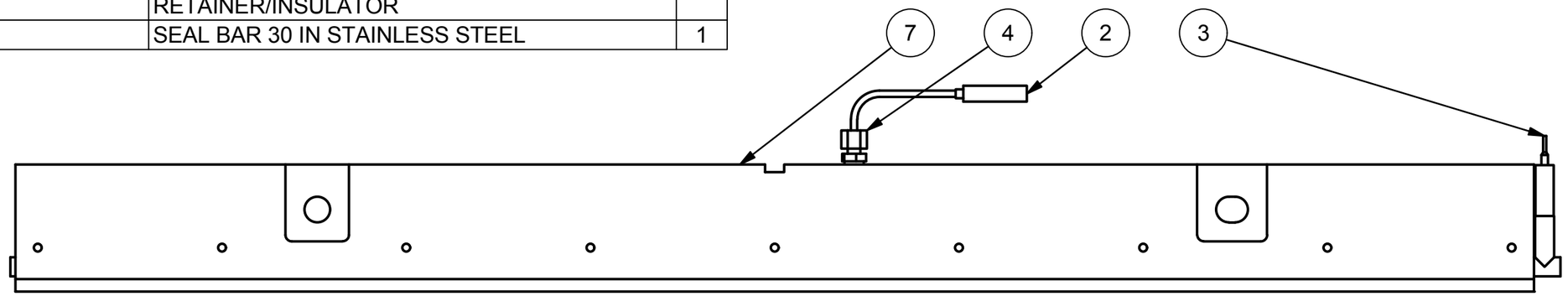
TITLE: MK3 30" CHISEL FACE SEAL BAR ASSSEMBLY

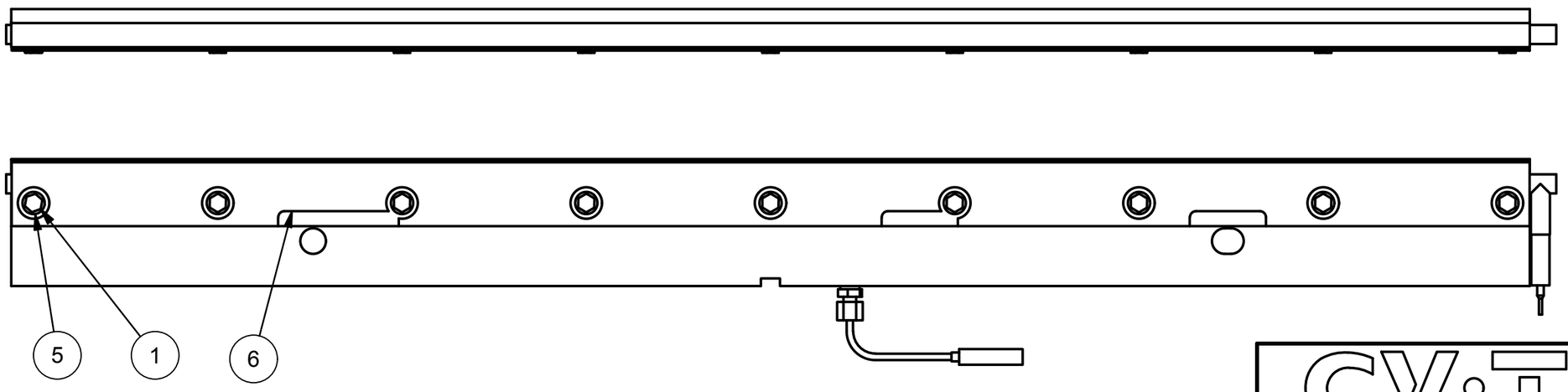
DWG NO.: MA263-0001 A

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	9
2	71000101	THERMOCOUPLE,SPECIAL AF	1
3	71200202	30" HEATER CARTRIDGE W/HEAT SHRINK	1
4	74100101	THERMOCOUPLE COUPLING	1
5	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	9
6	79100701	30" GLASS HEATER CARTRIDGE RETAINER/INSULATOR	1
7	86100701	SEAL BAR 30 IN STAINLESS STEEL	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/22/2018	CI





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ±.1
X.XX = ±.01
X.XXX = ±.005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

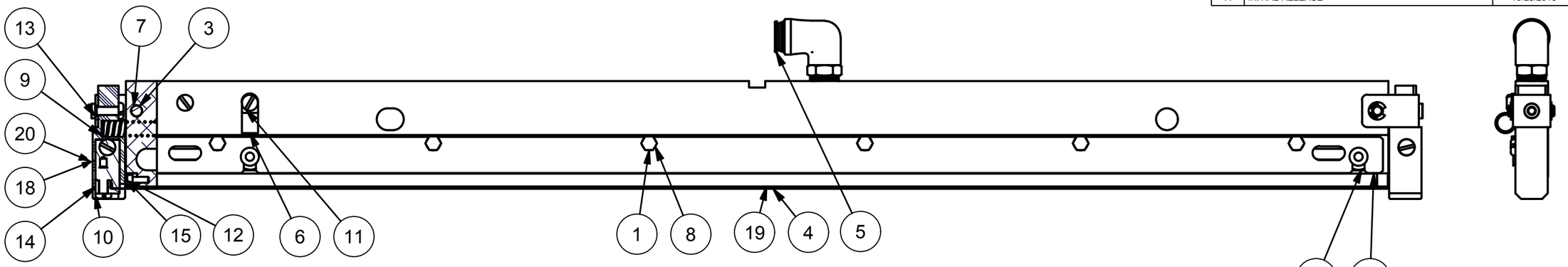
DRAWN BY: C.ILONTA

TITLE: MK3 30" FLAT FACE SEAL BAR ASSSEMBLY

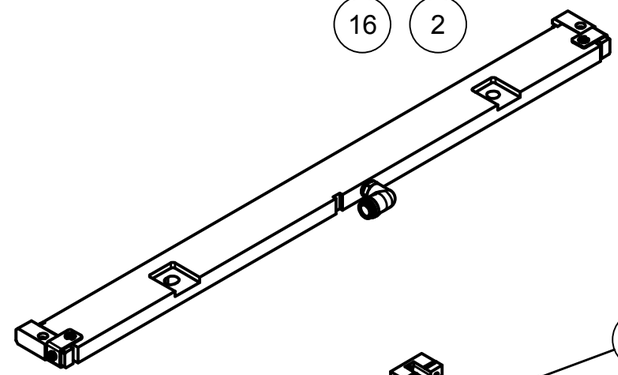
DWG NO.: MA263-0002 A

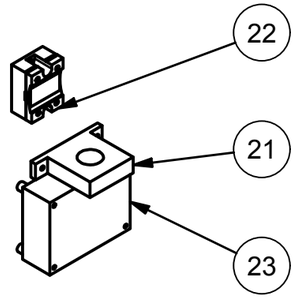
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	6
2	76107401	COVER, 29" IMPULSE COOLING CHANNEL	1
3	76111401	PIN IMPULSE TERMINAL PIVOT	2
4	71200801	SERIES B IMPULSE BAND 29 INCH LONG; 1/8 INCH WIDE	1
5	74103001	1/2 X 3/8 Parker Male Elbow	1
6	75000901	3/8 DIA. TUBE CLAMP x 3/8 WIDE	1
7	75102101	E-RING RETAINER FOR 1/4 ROD	4
8	75102501	#10 MED SPLIT LOCK WASHERS, S/S	6
9	75105501	SPRING; IMPULSE TERMINAL	2
10	75109801H	#10-32 X 5/8 PAN HEAD, SLOTTED, S/S	6
11	75112101	#10-32 X 3/8 PAN HEAD, SLOTTED, S/S	2
12	75112201	#6-32 X 3/8 SOCKET HEAD CAP SCREW, S/S	2
13	76111501	IMPULSE TERMINAL BRACKET WITH 10-32 PEM NUT	2
14	76124201	BAND RETAINER, IMPULSE SERIES B 1/8 TO 3/16 INCH HE BAND WIDTH	2
15	79100401	INSULATOR BLOCK FOR IMPULSE BAR ENDS	2
16	79500601	PLUG GROMMET 3/16 I.D., 5/8 O.D., 5/16 PANEL HOLE	2
17	86103501	SPACER, IMPULSE TERMINAL BLOCK	2
18	86103601A	TERMINAL LUG; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
19	89100101	SEAL BAR, 29 INCH ALUMINUM IMPULSE	1
20	89100901	TERMINAL BLOCK; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
21	71106501	CURRENT TRANSFORMER; 10-100A AC; .4 - 4V PEAK TO PEAK OUTPUT #MI100	1
22	71104502	Relay, solid state 24-265VAC	1
23	71003301	CIRCUIT BOARD; IMPULSE CONTROL MODULE	1
24	76111301	SPACER IMPULSE TERMINAL BLOCK	4





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

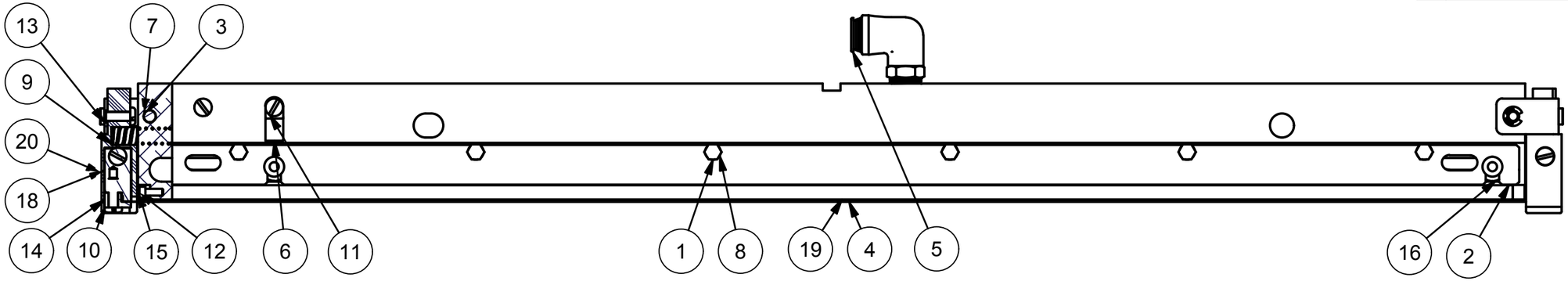
DRAWN BY: C.ILONTA

TITLE: MK3 30" IMPULSE SEAL BAR ASSSEMBLY

DWG NO.: MA263-0003 A

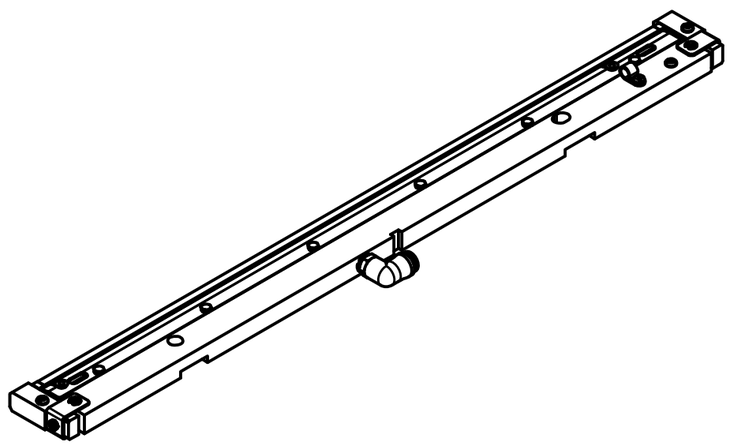
SCALE: N/A DATE: SHEET 1 OF 1

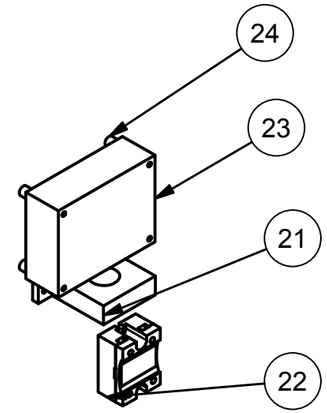
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/15/2018	CI
B	ADD FUSE #24	2/26/2025	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	75106101	10-32 X 3/8 Hhcs TRIMMED S/S	6
2	76107401	COVER, 29" IMPULSE COOLING CHANNEL	1
3	76111401	PIN IMPULSE TERMINAL PIVOT	2
4	71201101	HIGH ENERGY IMPULSE BAND 29 INCH LONG; 3/16 INCH WIDE	1
5	74103001	1/2 X 3/8 Parker Male Elbow	1
6	75000901	3/8 DIA. TUBE CLAMP x 3/8 WIDE	1
7	75102101	E-RING RETAINER FOR 1/4 ROD	4
8	75102501	#10 MED SPLIT LOCK WASHERS, S/S	6
9	75105501	SPRING; IMPULSE TERMINAL	2
10	75109801H	#10-32 X 5/8 PAN HEAD, SLOTTED, S/S	6
11	75112101	#10-32 X 3/8 PAN HEAD, SLOTTED, S/S	2
12	75112201	#6-32 X 3/8 SOCKET HEAD CAP SCREW, S/S	2
13	76111501	IMPULSE TERMINAL BRACKET WITH 10-32 PEM NUT	2
14	76124201	BAND RETAINER, IMPULSE SERIES B 1/8 TO 3/16 INCH HE BAND WIDTH	2
15	79100401	INSULATOR BLOCK FOR IMPULSE BAR ENDS	2
16	79500601	PLUG GROMMET 3/16 I.D., 5/8 O.D., 5/16 PANEL HOLE	2
17	86103501	SPACER, IMPULSE TERMINAL BLOCK	2
18	86103601A	TERMINAL LUG; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
19	89100101	SEAL BAR, 29 INCH ALUMINUM IMPULSE	1
20	89100901	TERMINAL BLOCK; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
21	71106501	CURRENT TRANSFORMER; 10-100A AC; .4 - 4V PEAK TO PEAK OUTPUT #MI100	1
22	71104502	Relay, solid state 24-265VAC	1
23	71003301	CIRCUIT BOARD; IMPULSE CONTROL MODULE	1
24*	71401601	Fuse 32 amp type aM	1
24	76111301	SPACER IMPULSE TERMINAL BLOCK	4

*-PARTS NOT PICTURED





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

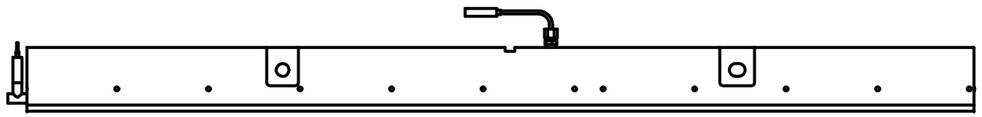
TITLE: MK3 30" IMPULSE HIGH ENERGY SEAL BAR ASSSEMBLY

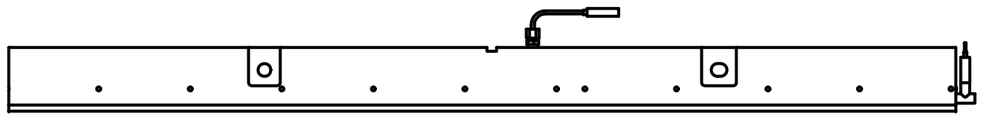
DWG NO.: MA263-0004 B

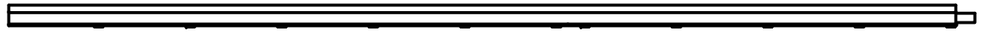
SCALE: N/A DATE: SHEET 1 OF 1

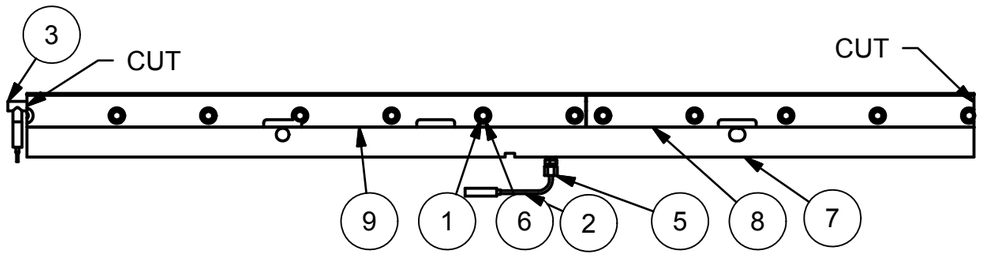
PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	22
2	71000101	THERMOCOUPLE,SPECIAL AF	2
3	71200702	37" HEATER CARTRIDGE LH W/HEAT SHRINK	1
4	71200703	37" HEATER CARTRIDGE RH W/HEAT SHRINK	1
5	74100101	THERMOCOUPLE COUPLING	2
6	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	22
7	76122701	SEAL BAR 37.5 IN. DUAL HEAD STAINLESS STEEL WTH TEFLON	2
8	79100601	24" GLASS HEATER CARTRIDGE RETAINER	2
9	79100701	30" GLASS HEATER CARTRIDGE RETAINER/INSULATOR	2

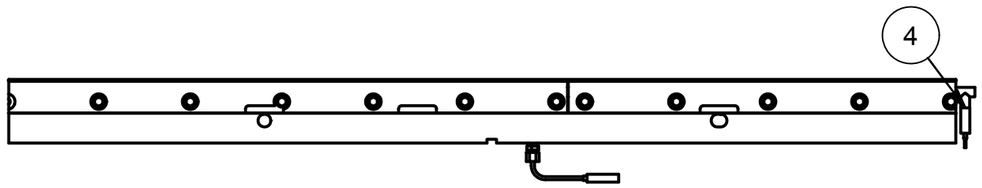
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI











M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

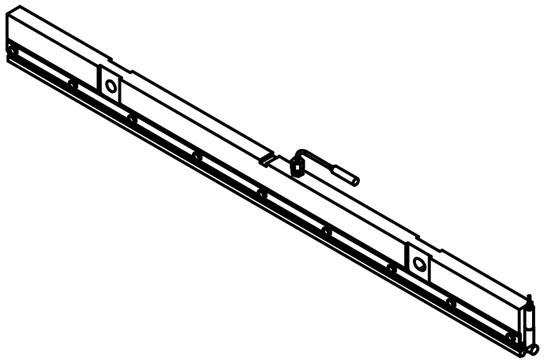
TITLE: MK3 37.5" L&R FLAT FACE SEAL BARS ASSSEMBLY

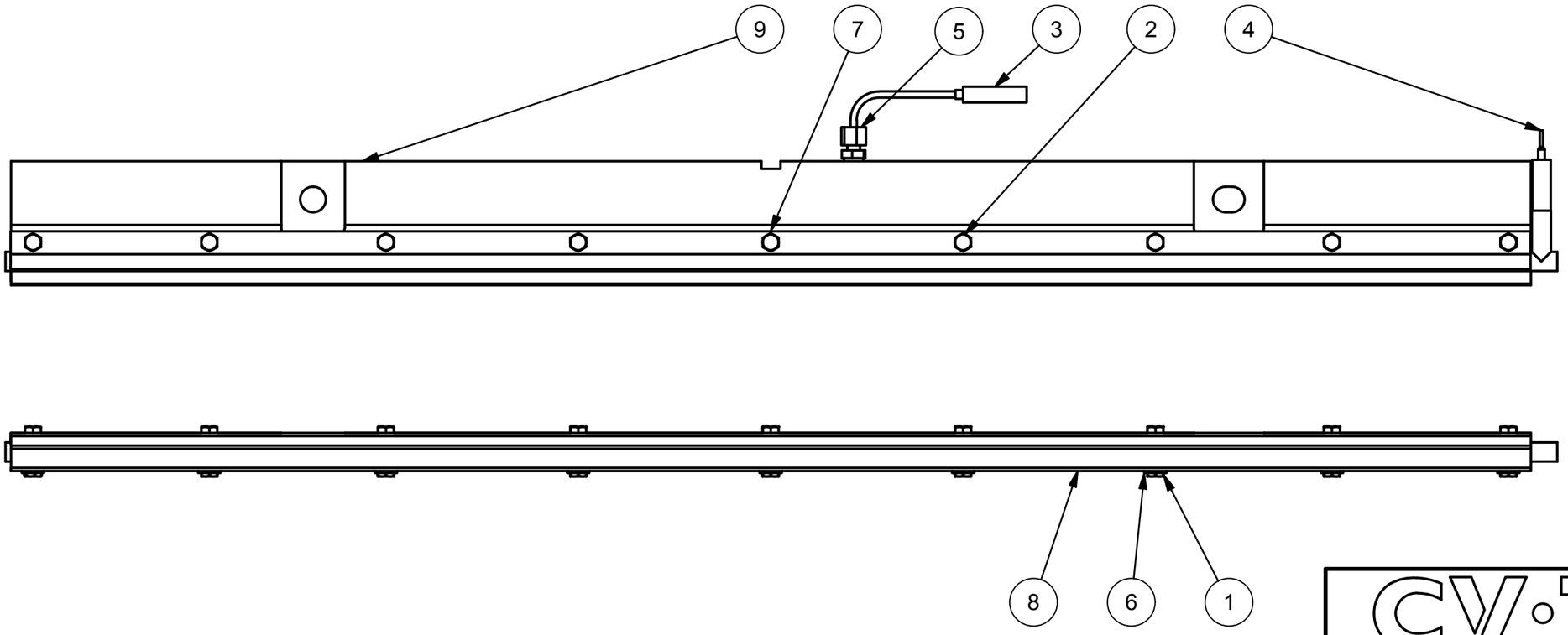
DWG NO.: MA263-0005

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	9
2	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	9
3	71000101	THERMOCOUPLE,SPECIAL AF	1
4	71200202	30" HEATER CARTRIDGE W/HEAT SHRINK	1
5	74100101	THERMOCOUPLE COUPLING	1
6	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	9
7	76125701	30 INCH CARTRIDGE RETAINER SS FOR CHISEL FACE; COOL EDGE SEAL BA	1
8	79102201	30 INCH CHISEL FACE COOL EDGE CHISEL FACE; COOL EDGE SEAL BAR	1
9	130301C1	MAPVAC/MK3 30" HOTBAR CUSTOM TOP SKINNY SEAL BAR	1

REVISIONS			
REV	DESCRIPTION	DATE	REVISED BY
A	INITIAL RELEASE	10/28/2021	CI





TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

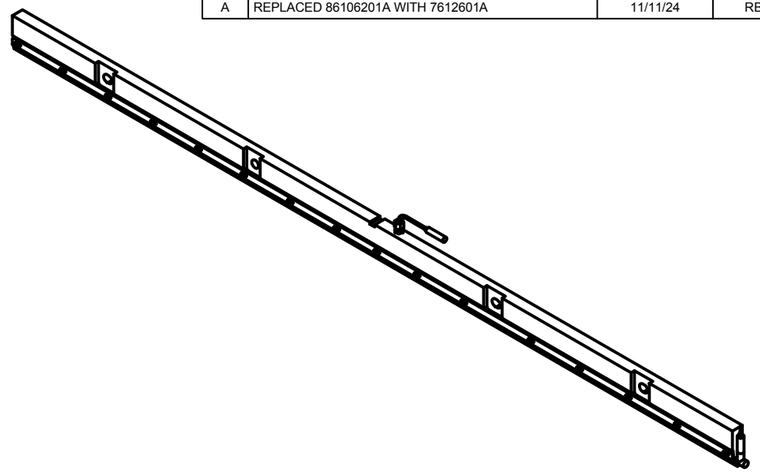
TITLE: MK3 30" HOTBAR CUSTOM TOP SKINNY SEAL BAR ASSSEMBLY

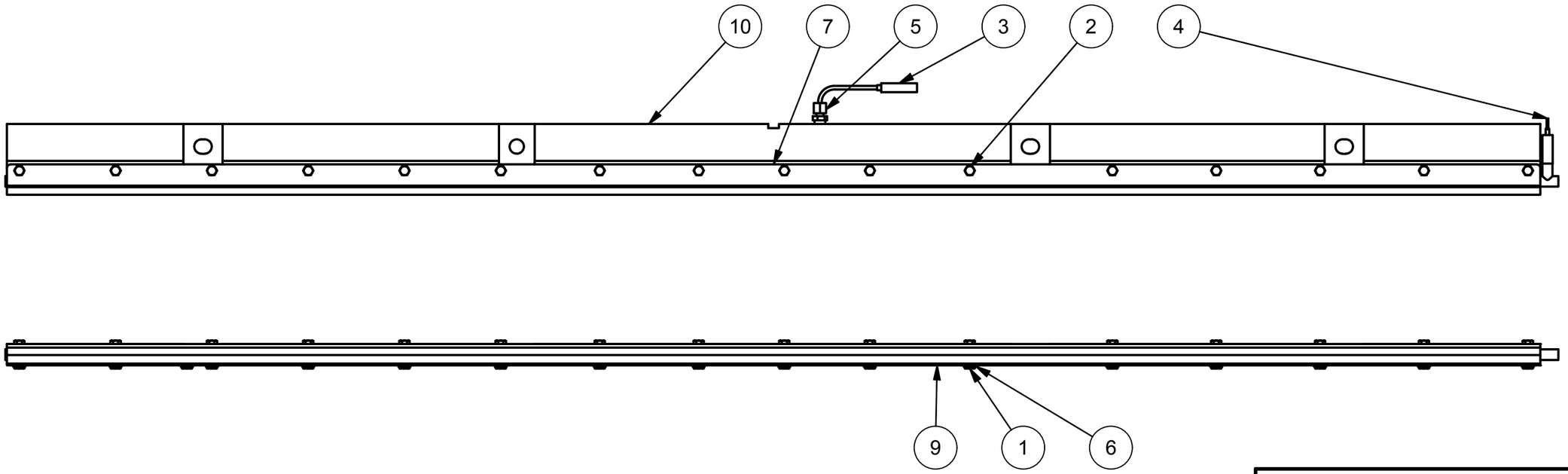
DWG NO.: MA263-0006 A

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	17
2	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	16
3	71000101	THERMOCOUPLE,SPECIAL AF	1
4	71200102	54" Heater Cartridge w/heat shrink	1
5	74100101	THERMOCOUPLE COUPLING	1
6	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	17
7	76125801	54 INCH CARTRIDGE RETAINER STAINLESS STEEL FOR CHISEL FACE, COOL EDGE SEAL BAR	1
8	79102301	RIGHT HAND 54" CHISEL FACE COOL EDGE	1
9	79102302	LEFT HAND 54" CHISEL FACE COOL EDGE	1
10	76126201A	SEAL BAR 54" STAINLESS STEEL	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	REPLACED 86106201A WITH 7612601A	11/11/24	RB





TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

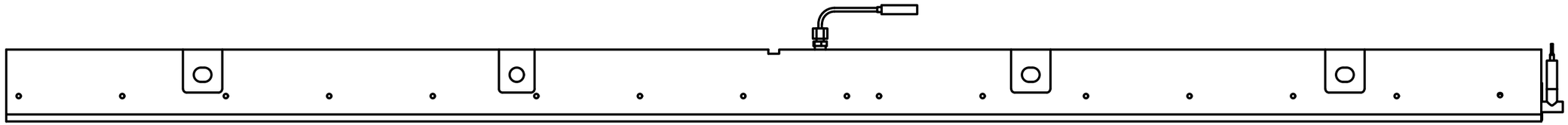
TITLE: MK3 54" CHISEL FACE SEAL BAR ASSSEMBLY

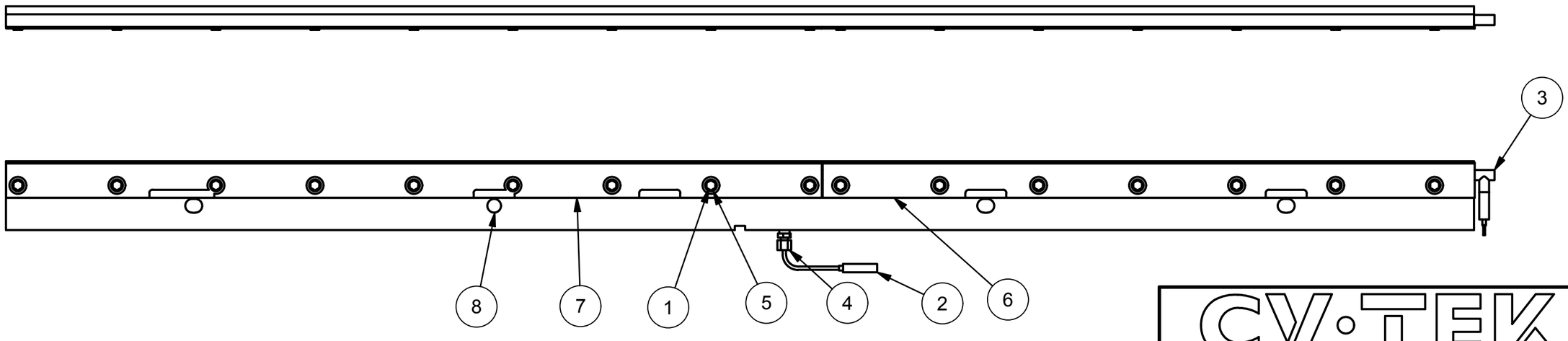
DWG NO.: MA263-0011 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	16
2	71000101	THERMOCOUPLE,SPECIAL AF	1
3	71200102	54" Heater Cartridge w/heat shrink	1
4	74100101	THERMOCOUPLE COUPLING	1
5	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	16
6	79100601	24" GLASS HEATER CARTRIDGE RETAINER	1
7	79100701	30" GLASS HEATER CARTRIDGE RETAINER/INSULATOR	1
8	86100501C1	SEAL BAR 54" STAINLESS STEEL	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ±.1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

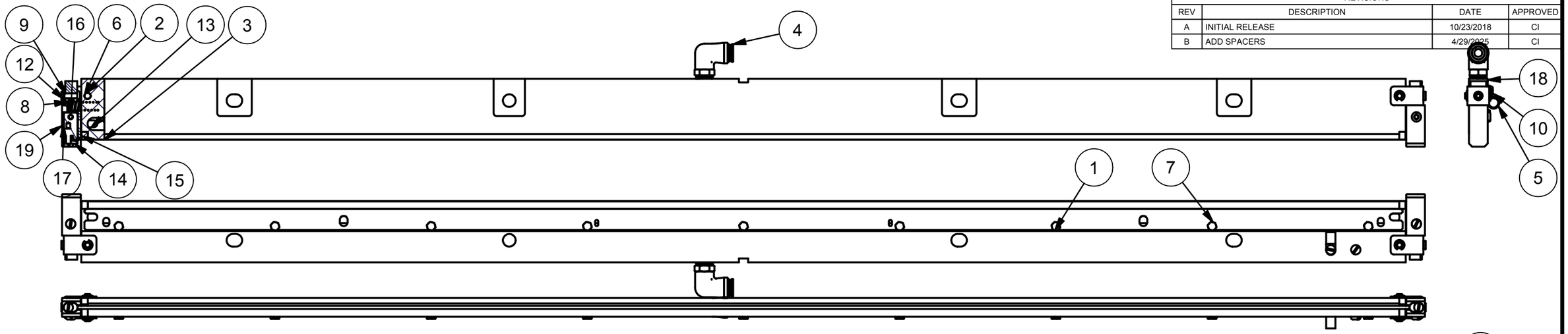
APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

TITLE: MK3 54" FLAT FACE SEAL BAR ASSSEMBLY

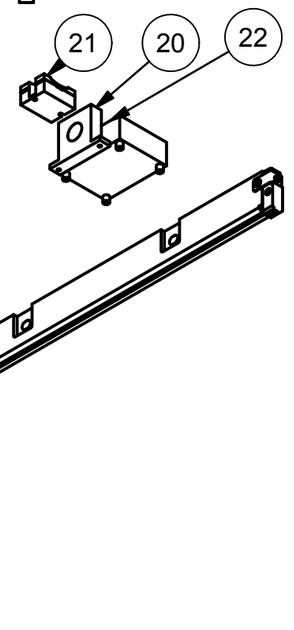
DWG NO.: MA263-0012 A

SCALE: N/A DATE: SHEET 1 OF 1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI
B	ADD SPACERS	4/29/2025	CI

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	9
2	76111401	PIN IMPULSE TERMINAL PIVOT	2
3	71200901	SERIES B IMPULSE BAND 53 INCH LONG; 1/8 INCH WIDE	1
4	74103001	1/2 X 3/8 Parker Male Elbow	1
5	75000901	3/8 DIA. TUBE CLAMP x 3/8 WIDE	1
6	75102101	E-RING RETAINER FOR 1/4 ROD	4
7	75102501	#10 MED SPLIT LOCK WASHERS, S/S	9
8	75105501	SPRING; IMPULSE TERMINAL	2
9	75109801H	#10-32 X 5/8 PAN HEAD, SLOTTED, S/S	6
10	75112101	#10-32 X 3/8 PAN HEAD, SLOTTED, S/S	2
11	75112201	#6-32 X 3/8 SOCKET HEAD CAP SCREW, S/S	2
12	76111501	IMPULSE TERMINAL BRACKET WITH 10-32 PEM NUT	2
13	76111701	COVER 53" IMPULSE COOLING CHANNEL	1
14	76124201	BAND RETAINER, IMPULSE SERIES B 1/8 TO 3/16 INCH HE BAND WIDTH	2
15	79100401	INSULATOR BLOCK FOR IMPULSE BAR ENDS	2
16	86103501	SPACER, IMPULSE TERMINAL BLOCK	2
17	86103601A	TERMINAL LUG; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
18	89100201	SEAL BAR, 53 INCH ALUMINUM IMPULSE	1
19	89100901	TERMINAL BLOCK; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
20	71106501	CURRENT TRANSFORMER; 10-100A AC; .4 - 4V PEAK TO PEAK OUTPUT #MI100	1
21	71104502	Relay, solid state 24-265VAC	1
22	71003301	CIRCUIT BOARD; IMPULSE CONTROL MODULE	1
23	76111301	SPACER IMPULSE TERMINAL BLOCK	4



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

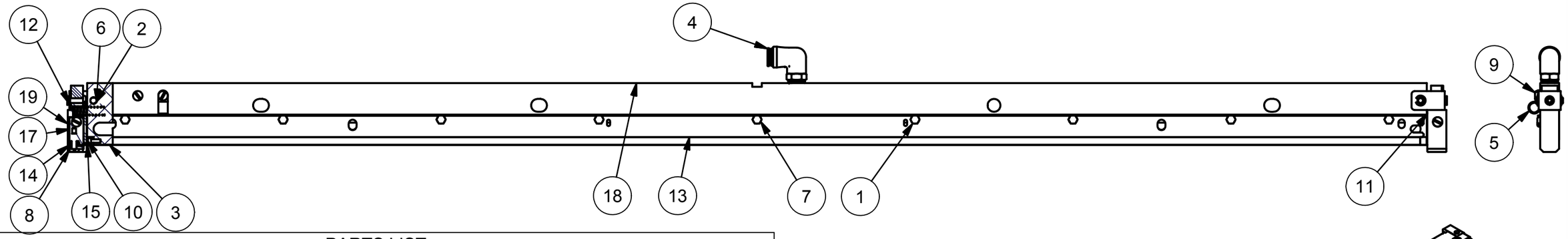
DRAWN BY: TomJr

TITLE: MK3 54" IMPULSE SEAL BAR ASSSEMBLY

DWG NO.: MA263-0013 B

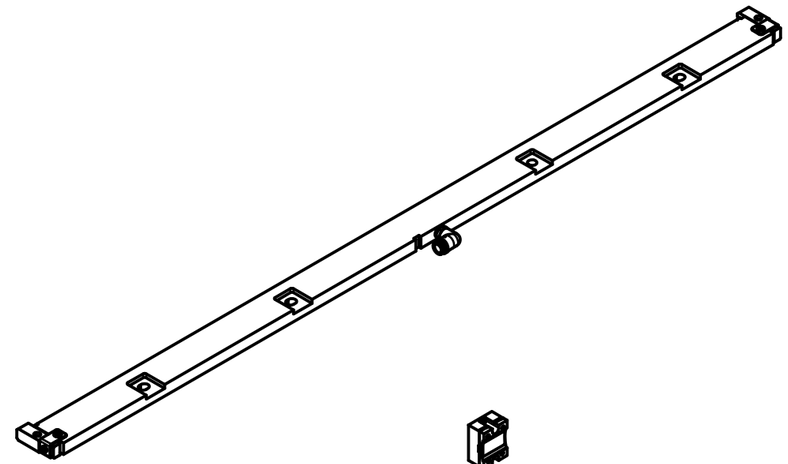
SCALE: N/A DATE: SHEET 1 OF 1

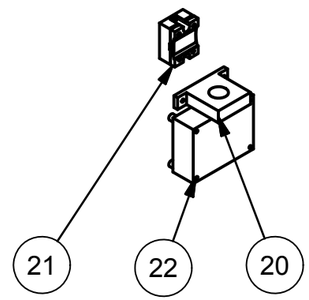
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI
B	ADD FUSE #23	2/26/2025	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	9
2	76111401	PIN IMPULSE TERMINAL PIVOT	2
3	71201201	HIGH ENERGY IMPULSE BAND 53 INCH LONG; 3/16 INCH WIDE	1
4	74103001	1/2 X 3/8 Parker Male Elbow	1
5	75000901	3/8 DIA. TUBE CLAMP x 3/8 WIDE	1
6	75102101	E-RING RETAINER FOR 1/4 ROD	4
7	75102501	#10 MED SPLIT LOCK WASHERS, S/S	9
8	75109801H	#10-32 X 5/8 PAN HEAD, SLOTTED, S/S	6
9	75112101	#10-32 X 3/8 PAN HEAD, SLOTTED, S/S	2
10	75112201	#6-32 X 3/8 SOCKET HEAD CAP SCREW, S/S	2
11	75117001	SPRING; HIGH ENERGY IMPULSE TERMINAL BLOCK; 53 INCH	2
12	76111501	IMPULSE TERMINAL BRACKET WITH 10-32 PEM NUT	2
13	76111701	COVER 53" IMPULSE COOLING CHANNEL	1
14	76124201	BAND RETAINER, IMPULSE SERIES B 1/8 TO 3/16 INCH HE BAND WIDTH	2
15	79100401	INSULATOR BLOCK FOR IMPULSE BAR ENDS	2
16	86103501	SPACER, IMPULSE TERMINAL BLOCK	2
17	86103601A	TERMINAL LUG; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
18	89100201	SEAL BAR, 53 INCH ALUMINUM IMPULSE	1
19	89100901	TERMINAL BLOCK; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
20	71106501	CURRENT TRANSFORMER; 10-100A AC; .4 - 4V PEAK TO PEAK OUTPUT #MI100	1
21	71104502	Relay, solid state 24-265VAC	1
22	71003301	CIRCUIT BOARD; IMPULSE CONTROL MODULE	1
23*	71401601	Fuse 32 amp type aM	1
23	76111301	SPACER IMPULSE TERMINAL BLOCK	4

*-PARTS NOT PICTURED





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ±.1
X.XX = ±.01
X.XXX = ±.005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

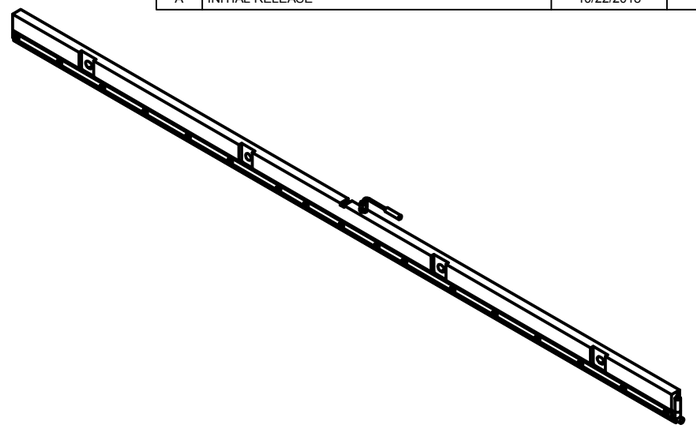
TITLE: MK3 54" IMPULSE HIGH ENERGY SEAL BAR ASSSEMBLY

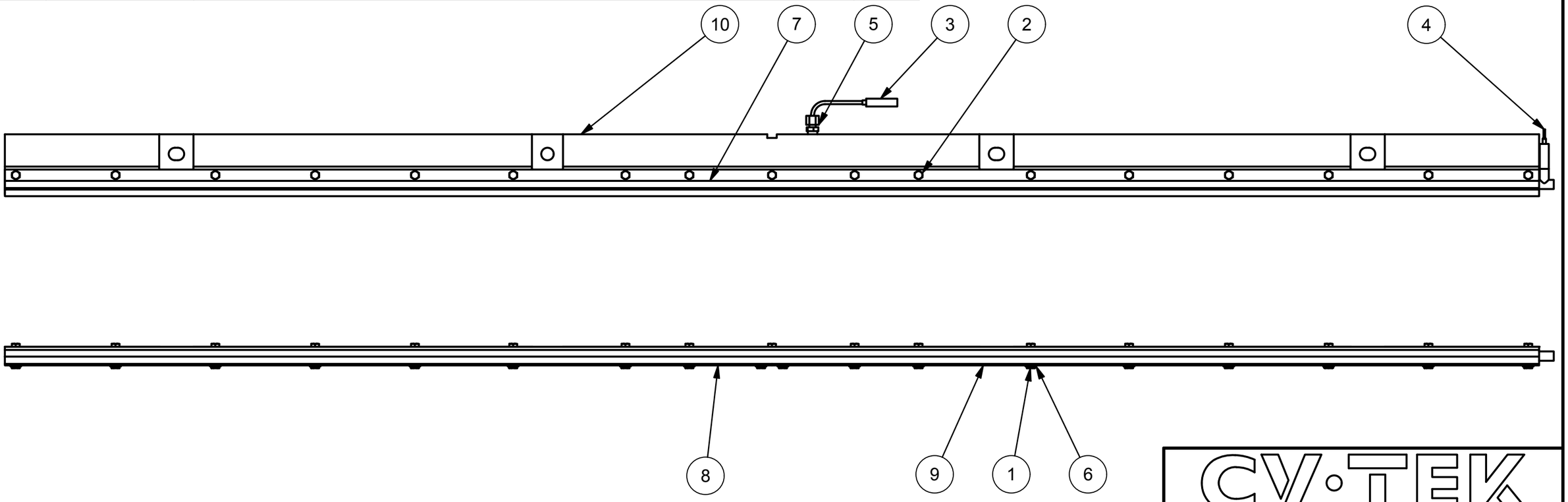
DWG NO.: MA263-0014 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	18
2	110221C1	#10-24 X 3/8 LNG HEX HEAD MACHINE SCREW, S/S	17
3	71000101	THERMOCOUPLE,SPECIAL AF	1
4	71200402	62" Heater Cartridge w/heat shrink	1
5	74100101	THERMOCOUPLE COUPLING	1
6	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	18
7	76125901	61-1/2 INCH CARTRIDGE RETAINER STAINLESS STEEL FOR CHISEL FACE, COOL EDGE SEAL BA	1
8	79102401	LEFT HAND 61-1/2 INCH CHISEL FACE COOL EDGE	1
9	79102402	RIGHT HAND 61-1/2 INCH CHISEL FACE COOL EDGE	1
10	86106301	CHISEL FACE, COOL EDGE 61-1/2 SEAL BAR	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/22/2018	N.B





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ± .1
X.X = ± .1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

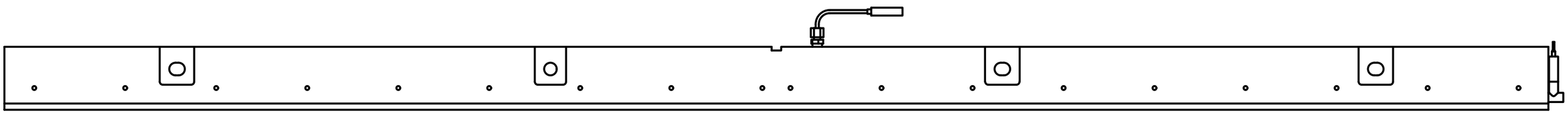
TITLE: MK3 61-1/2" CHISEL FACE SEAL BAR ASSSEMBLY

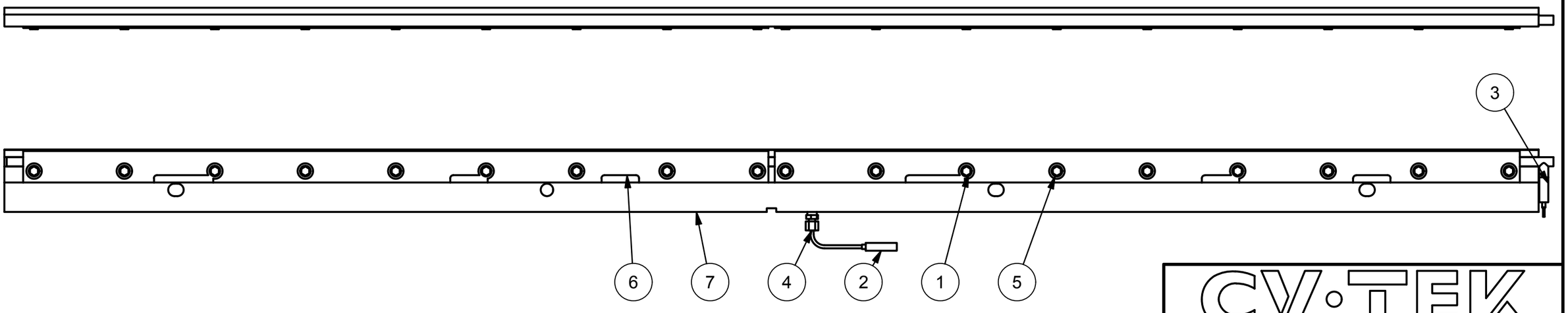
DWG NO.: MA263-0021 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	18
2	71000101	THERMOCOUPLE,SPECIAL AF	1
3	71200402	62" Heater Cartridge w/heat shrink	1
4	74100101	THERMOCOUPLE COUPLING	1
5	75102801	#10 FLAT WASHER, 0.438 O.D., 0.04 THCK, S/S	18
6	79100701	30" GLASS HEATER CARTRIDGE RETAINER/INSULATOR	2
7	86100201	SEAL BAR 61-1/2 INCH STAINLESS STEEL	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ±.1
X.XX = ±.01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

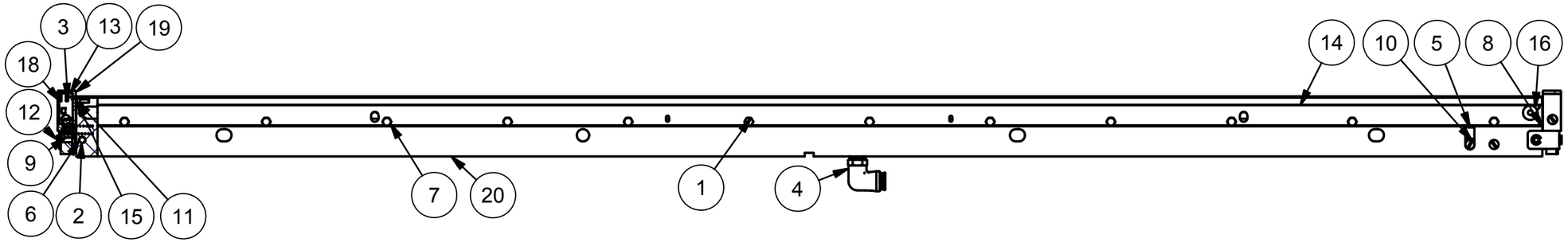
DRAWN BY: C.ILONTA

TITLE: MK3 61-1/2" FLAT FACE SEAL BAR ASSSEMBLY

DWG NO.: MA263-0022 A

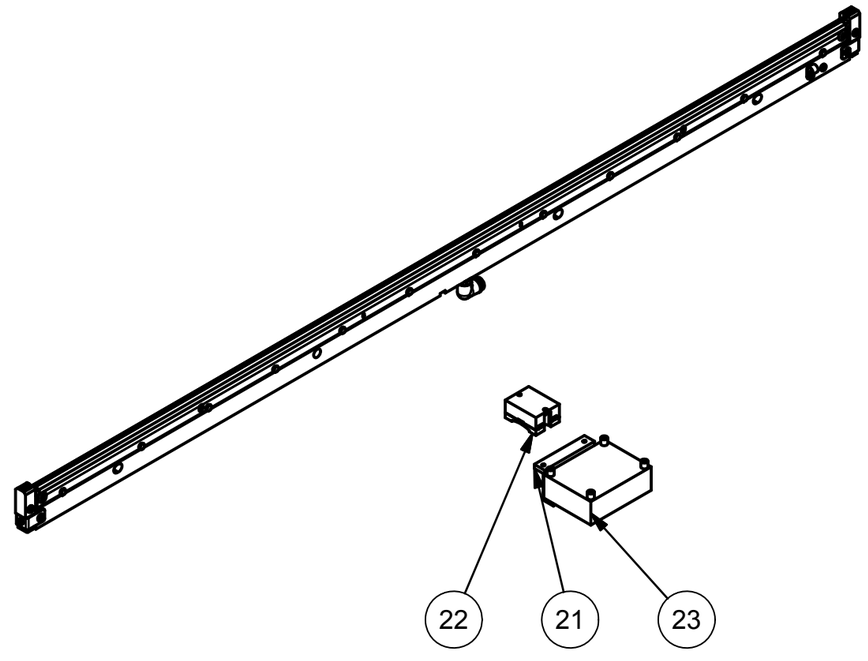
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/23/2018	CI
B	ADD FUSE #25 AND SPACERS	2/26/2025	CI



PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	.190-32 x .375lg (75106101)	10-32 X 3/8 Hhcs TRIMMED S/S	12
2	76111401	PIN IMPULSE TERMINAL PIVOT	2
3	71201301	HIGH ENERGY IMPULSE BAND 60.5 INCH LONG; 3/16 INCH WIDE	1
4	74103001	1/2 X 3/8 Parker Male Elbow	1
5	75000901	3/8 DIA. TUBE CLAMP x 3/8 WIDE	1
6	75102101	E-RING RETAINER FOR 1/4 ROD	4
7	75102501	#10 MED SPLIT LOCK WASHERS, S/S	12
8	75105501	SPRING; IMPULSE TERMINAL	2
9	75109801H	#10-32 X 5/8 PAN HEAD, SLOTTED, S/S	6
10	75112101	#10-32 X 3/8 PAN HEAD, SLOTTED, S/S	2
11	75112201	#6-32 X 3/8 SOCKET HEAD CAP SCREW, S/S	2
12	76111501	IMPULSE TERMINAL BRACKET WITH 10-32 PEM NUT	2
13	76124201	BAND RETAINER, IMPULSE SERIES B 1/8 TO 3/16 INCH HE BAND WIDTH	2
14	76124401	COVER, 60-1/2" IMPULSE COOLING CHANNEL	1
15	79100401	INSULATOR BLOCK FOR IMPULSE BAR ENDS	2
16	79500601	PLUG GROMMET 3/16 I.D., 5/8 O.D., 5/16 PANEL HOLE	2
17	86103501	SPACER, IMPULSE TERMINAL BLOCK	2
18	86103601A	TERMINAL LUG; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
19	89100901	TERMINAL BLOCK; IMPULSE 1/8 TO 3/16 INCH BAND WIDTH	2
20	89101001	SEAL BAR 60-1/2 INCH ALUMINUM IMPULSE	1
21	71106501	CURRENT TRANSFORMER; 10-100A AC; .4 - 4V PEAK TO PEAK OUTPUT #MI100	1
22	71104502	Relay, solid state 24-265VAC	1
23	71003301	CIRCUIT BOARD; IMPULSE CONTROL MODULE	1
25*	71401601	Fuse 32 amp type aM	1
24	76111301	SPACER IMPULSE TERMINAL BLOCK	4

*-PARTS NOT PICTURED



CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

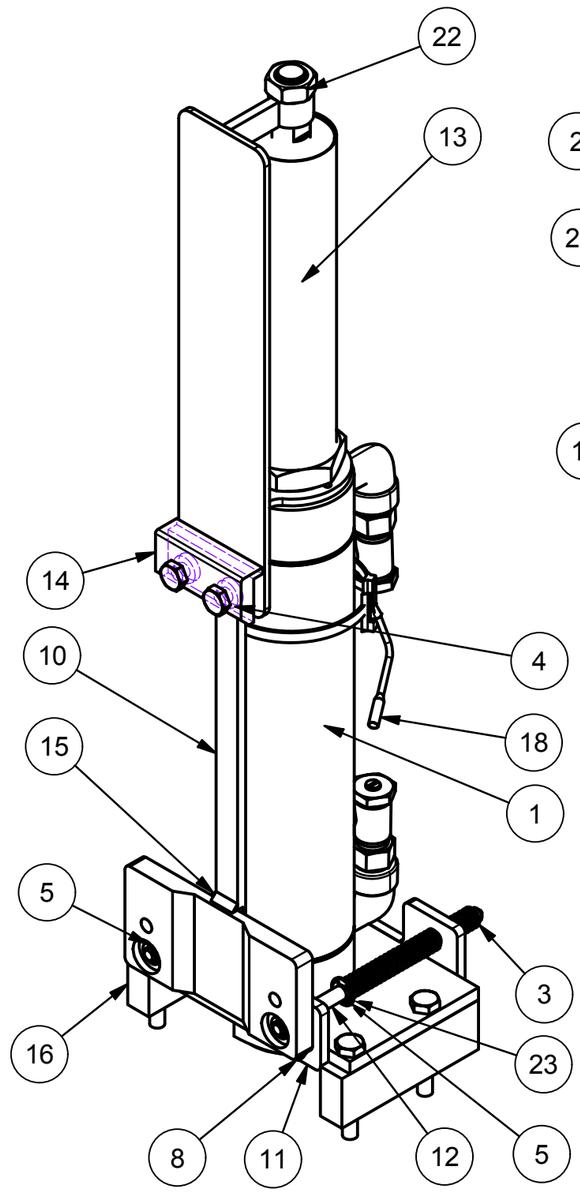
TITLE: MK3 60-1/2" IMPULSE HIGH ENERGY SEAL BAR ASSSEMBLY

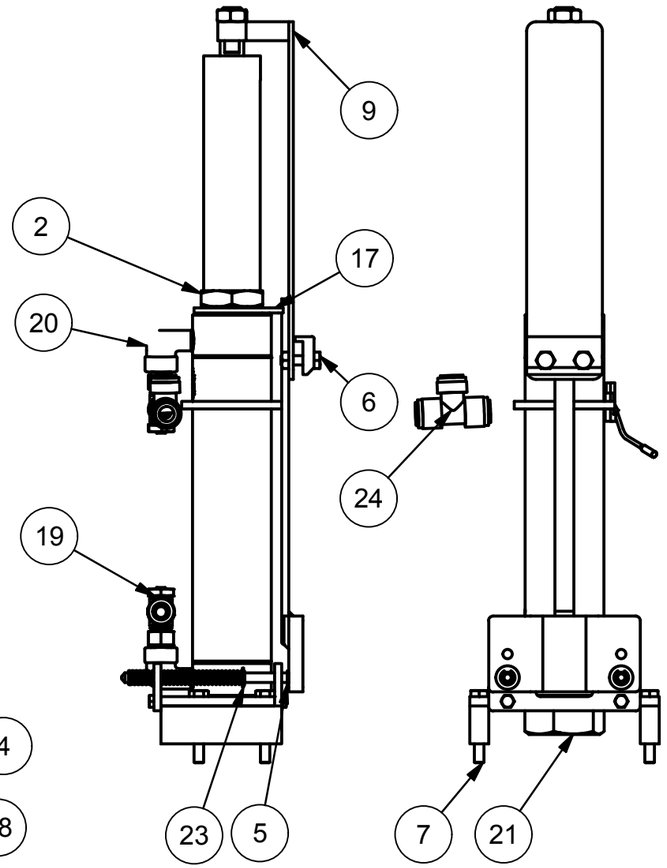
DWG NO.: MA263-0023 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	73200502	CYLINDER, COMPACT PROBE TOWER w/DELRIN ENDS	1
2	75100601A	ROD COVER NUT, COMPACT PROBE TOWER	1
3	75100701	SPRING, PROBE EJECTOR, COMPACT PROBE TOWER, 3.25 LNG FOR 1/4 ROD	2
4	75102001	CIRCULAR PUSH-ON FOR 7/32 ROD	2
5	75102101	E-RING RETAINER FOR 1/4 ROD	6
6	75109601	1/4-20 X 7/8 LNG HEX HEAD CAP SCREW, S/S	2
7	75110101	1/4-28 X 1-3/4 LNG HEX HEAD CAP SCREW, S/S	4
8	75110701	#10-32 X 1/2 LNG HEX HEAD MACHINE SCREW, S/S	4
9	76105001A	PROBE PUSH BRACKET COMPLETE	1
10	76105101A	PROBE GUIDE, COMPACT PROBE	1
11	76105201A	BEARING PLATE, COMPACT PROBE TOWER	2
12	76105301A	GUIDE PIN, COMPACT PROBE TOWER	2
13	76105401A	CYLINDER ROD COVER, COMPACT	1
14	76105601A	PROBE CLEVIS, COMPACT PROBE TOWER	1
15	76105701A	CYLINDER MOUNTING PLATE, COMPACT PROBE TOWER	1
16	76105801A	SUPPORT BLOCK, COMPACT PROBE TOWER	2
17	76120601A	BRACKET, PROBE GUIDE COMPACT PROBE TOWER	1
18	61100901	HALL EFFECT SWITCH ASSEMBLY	1
19	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
20	74400701	1/4 NPT 90 Deg. STREET ELBOW S/S	2
21	75100801	Cylinder mounting nut, compact 1-1/4-12 UNF S/S, 3/4 Thick	1
22	75105101	1/2-20 HEX JAM NUT S/S	1
23	75110201	1/4 FLAT WASHER (.265 I.D. X .500 O.D. X .032 THK.)	2
24	74203501	3/8 OD TUBE, UNION TEE, PLASTIC	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	8/10/2017	B.B.
B	ADDED 73501102, 74400701, 75100801, 75105101, 75110201	11/5/2024	S.P.





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: admin

TITLE: BAREBONE COMPACT PROBE TOWER

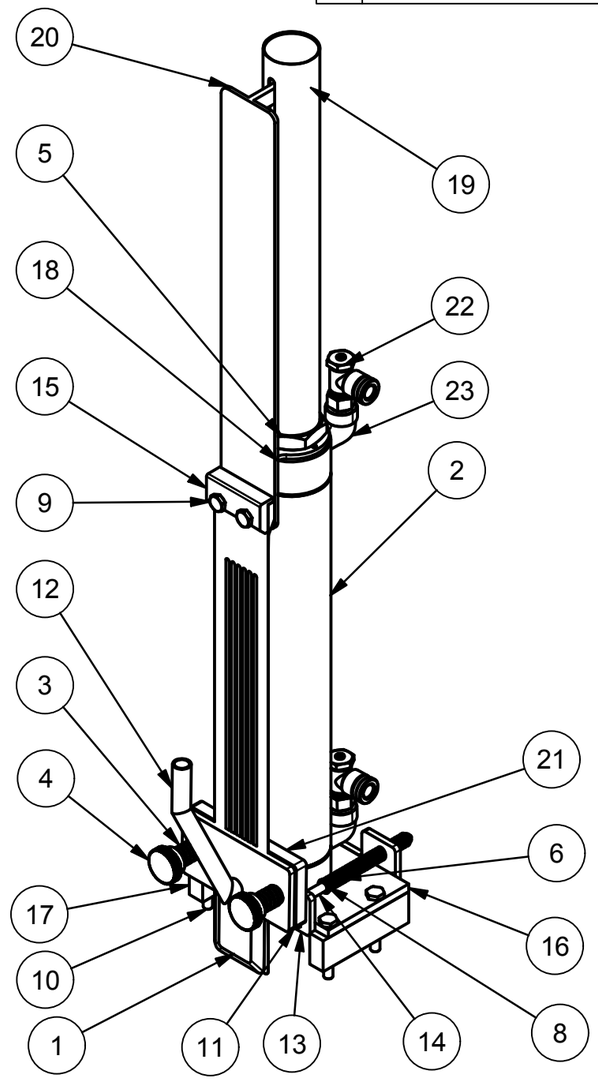
DWG NO.: MA270-0005 B

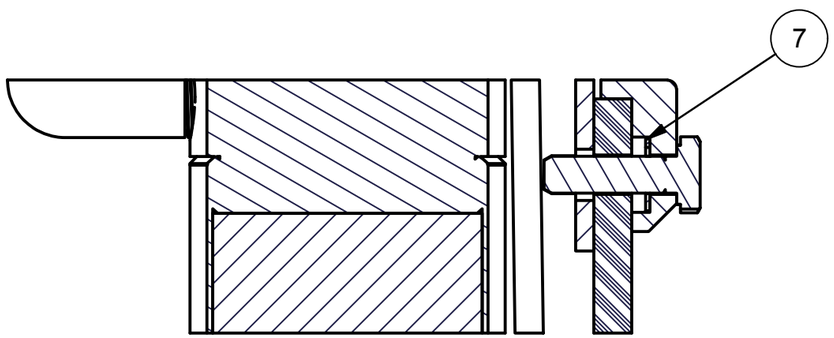
SCALE: N/A | DATE: 8/10/2017 | SHEET 1 OF 1

PARTS LIST

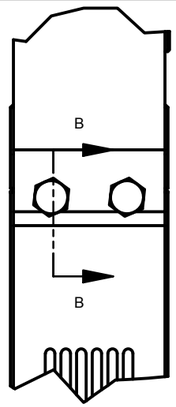
ITEM	PART NO.	DESCRIPTION	QTY
1	72401001	PROBE NYLON OPEN LONG 15-1/4 OVERALL LENGTH SIX 12.75/324MM LONG FACE GROOVES EXTRA LONG STROKE: 10.00 LONG	1
2	73200701	Cylinder, compact probe tower with Delrin ends, 10 stroke Bimba #CPC-00147-A-10	1
3	75100201	SPRING, PROBE COVER PLATE	2
4	75100401A	BOLT, PROBE COVER PLATE	2
5	75100601A	ROD COVER NUT, COMPACT PROBE TOWER	1
6	75100701	SPRING, PROBE EJECTOR, COMPACT PROBE TOWER, 3.25 LNG FOR 1/4 ROD	2
7	75102001	CIRCULAR PUSH-ON FOR 7/32 ROD	2
8	75102101	E-RING RETAINER FOR 1/4 ROD	8
9	75109601	1/4-20 x 7/8 LG. - HHCS	2
10	75110101	1/4-28 UNF X 1 3/4 LG. HHCS	4
11	75110701	10-32 X 1/2 HEX HEAD CAP SCREW, S/S	4
12	76101001	Cover plate, probe	1
13	76105201A	BEARING PLATE, COMPACT PROBE TOWER	2
14	76105301A	GUIDE PIN, COMPACT PROBE TOWER	2
15	76105601A	PROBE CLEVIS, COMPACT PROBE TOWER	1
16	76105701A	CYLINDER MOUNTING PLATE, COMPACT PROBE TOWER	1
17	76105801A	SUPPORT BLOCK, COMPACT PROBE TOWER	2
18	76120601A	BRACKET, PROBE GUIDE COMPACT PROBE TOWER	1
19	76121101	Cylinder rod cover, compact probe tower, 10 stroke -SPECIAL ORDER ONLY	1
20	76121201	Probe push bracket complete, 10 stroke -SPECIAL ORDER ONLY	1
21	76121301	Probe guide, compact probe tower, 10 inch stroke -SPECIAL ORDER ONLY	1
22	73501102	1/4 NPT X 3/8 TUBE FLOW CONTROL	2
23	74400701	1/4 NPT 90 Deg. STREET ELBOW S/S	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	3/26/2015	BB





SECTION B-B
SCALE 1 : 1



DETAIL A
SCALE 1 / 2

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
NOMINAL = ±.1
X.X = ±.1
X.XX = ± .01
X.XXX = ± .005
DRILLED HOLE: STANDARD ISO

APPROVED MFG: APPROVED ENG:

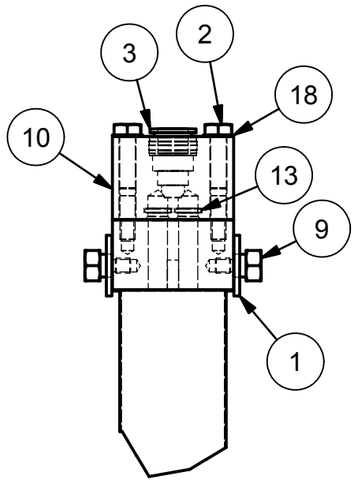
DRAWN BY: admin

TITLE:

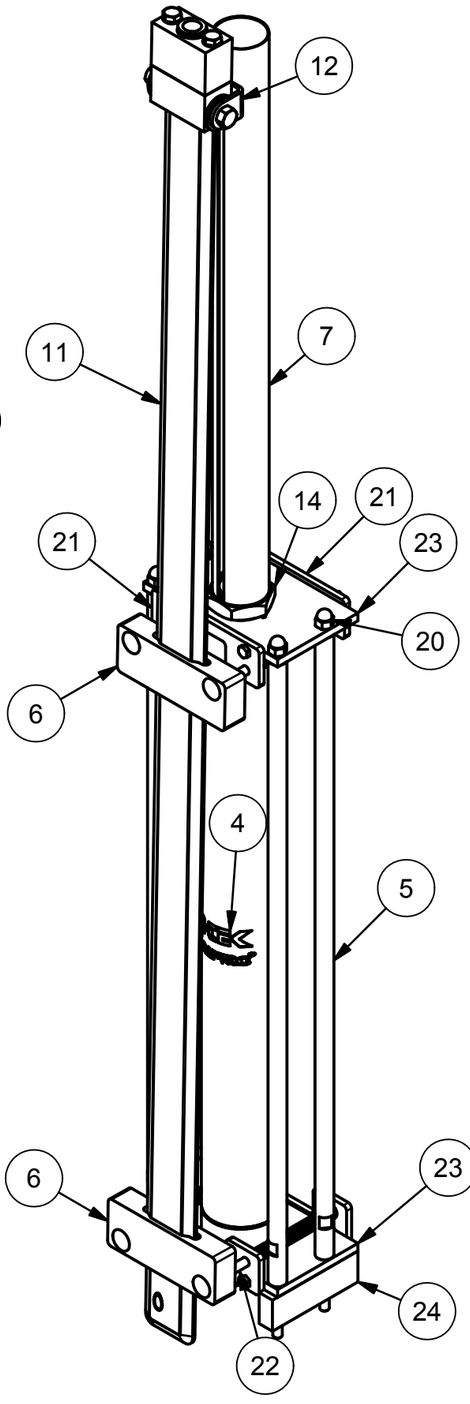
9.5" STROKE PROBE TOWER

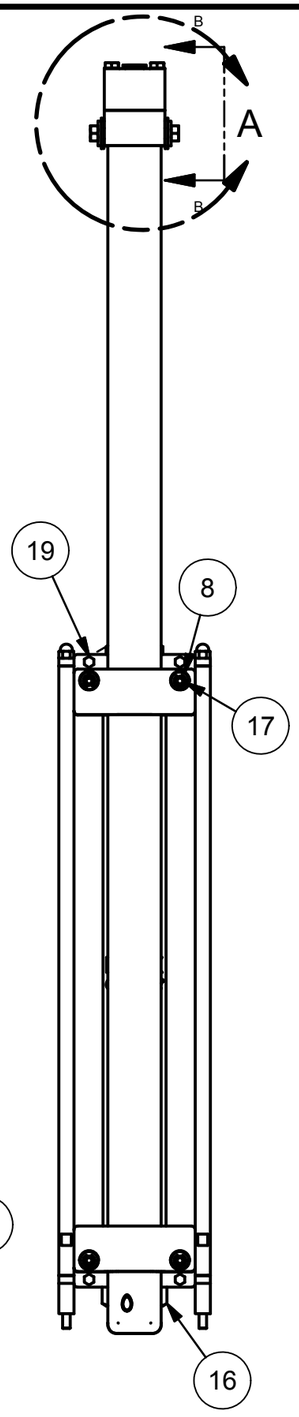
DWG NO.: MA270-0003 A

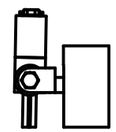
SCALE: N/A | DATE: | SHEET 1 OF 1



DETAIL A
SCALE 0.40 : 1







VIEW B-B
SCALE .2

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QT
1	108533C1	.391 ID x 1 OD x .093 WALL UHMW WASHER	2
2	109271C1	1/4-20 X 1 3/4 LG. - HHCS	2
3	121261C1	1/2 OD TUBE HALF CARTRIDGE S/S	1
4	122102C1	16in STROKE 2in BORE S/S CYLINDER	1
5	122104C1	16in STROKE PROBE TOWER TIE ROD	4
6	122105C1	16in STROKE PROBE TOWER GUIDE BLOCK	2
7	122106C1	16in STROKE PROBE TOWER CYLINDER COVER	1
8	122107C1	16in STROKE PROBE TOWER GUIDE BUSHING	4
9	122108C1	16in STROKE PROBE TOWER SHOULDER BOLT	2
10	122109C1	16in STROKE PROBE TOWER MANIFOLD BLOCK	1
11	122110C1	16in STROKE PROBE TOWER PROBE WELDMENT	1
12	122115C1	16in STROKE PROBE TOWER PROBE PIVOT WELDMENT	1
13	122118C1	5/16 ID x 1/16 THK VITON O-RING	2
14	75100601A	ROD COVER NUT, COMPACT PROBE TOWER	1
15	75100701	SPRING, PROBE EJECTOR, COMPACT PROBE TOWER, 3.25 LNG FOR 1/4 ROD	4
16	75100801	Cylinder mounting nut, compact 1-1/4-12 UNF S/S, 3/4 Thick	1
17	75102101	E-RING RETAINER FOR 1/4 ROD	12
18	75110201	1/4 FLAT WASHER (.265 I.D. X .500 O.D. X .032 THK.)	2
19	75110701	10-32 X 1/2 HEX HEAD CAP SCREW, S/S	8
20	75111801	1/4-20 UNC ACORN NUT	4
21	76105201A	BEARING PLATE, COMPACT PROBE TOWER	4
22	76105301A	GUIDE PIN, COMPACT PROBE TOWER	4
23	76105701A	CYLINDER MOUNTING PLATE, COMPACT PROBE TOWER	2
24	76105801A	SUPPORT BLOCK, COMPACT PROBE TOWER	2

M-TEK INC.

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

APPROVED MFG: APPROVED ENG: C. MROZ

DRAWN BY: T. LIAKOPOULOS

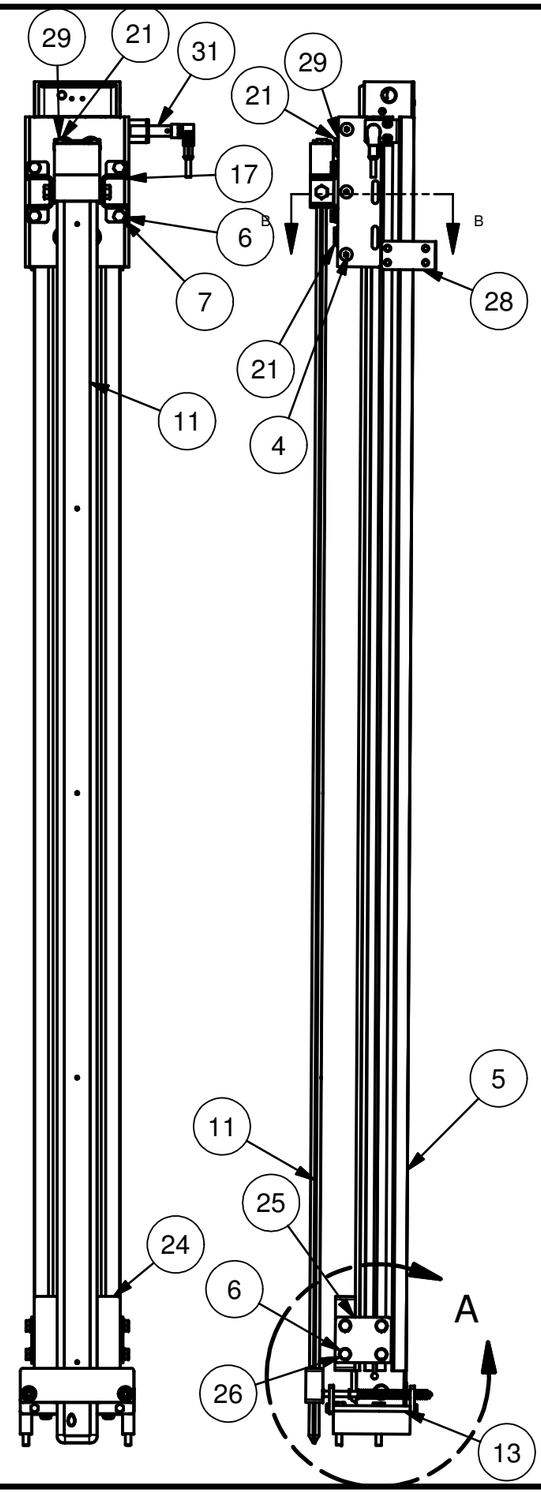
TITLE: 16in STROKE PROBE TOWER ASSEMBLY

DWG NO.: MA270-0002

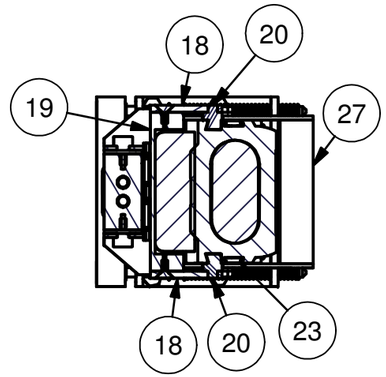
SCALE: N/A | DATE: 10/3/2013 | SHEET 1 OF 1

PARTS LIST

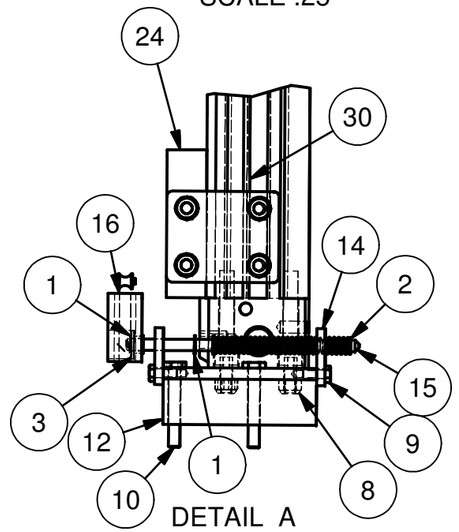
ITEM	PART NO.	DESCRIPTION	QTY
1	75102101	E-RING RETAINER FOR 1/4 ROD	8
2	75100701	SPRING, PROBE EJECTOR, COMPACT PROBE TOWER, 3.25 LNG FOR 1/4 ROD	2
3	122107C1	16in STROKE PROBE TOWER GUIDE BUSHING	2
4	108239C1	1/4-20 x .500 FHCS	6
5	122123C1	48" STROKE RODLESS BAND CLYINDER	1
6	75118001	*Varies*	12
7	110519C1	1/4-20 UNC X 3/8 LONG HEX HEAD CAP SCREW, STAINLESS STEEL	4
8	75103701	1/4-20 UNC LOCKNUT W/NYLON INSERT	4
9	75110701	10-32 X 1/2 HEX HEAD CAP SCREW, S/S	4
10	75110101	1/4-28 UNF X 1 3/4 LG. HHCS	4
11	122124C1	48" STROKE PROBE ASSEMBLY	1
12	122128C1	PROBE BAND CYLINDER SUPPORT BLOCK	2
13	122129C1	BAND CYLINDER SUPPORT PLATE	1
14	122130C1	PROBE BAND CYLINDER BEARING PLATE	2
15	122131C1	PROBE BAND CYLINDER GUIDE PIN	2
16	122132C1	PROBE BAND CYLINDER GUIDE BLOCK	1
17	122136C1	PROBE BAND CYLINDER CARRIAGE MOUNT BRACKET	2
18	122134C1	PROBE BAND CYLINDER CARRIAGE SIDE	2
19	122133C1	PROBE BAND CYLINDER CARRIAGE BASE	1
20	122135C1	PROBE BAND CYLINDER CARRIAGE GUIDE	2
21	122137C1	PROBE BAND CYLINDER CARRIAGE SHOULDER BOLT	4
22	122138C1	PROBE BAND CYLINDER MOUNT STUD	4
23	122147C1	PROBE BAND CYLINDER STOP T-NUT	2
24	122148C1	PROBE BAND CYLINDER STOP BLOCK	1
25	122149C1	PROBE BAND CYLINDER STOP SIDE	2
26	108586C1	1/4-20 X 5/8 LNG HEX HEAD CAP SCREW, S/S	8
27	122151C1	PROBE BAND CYLINDER SUPPORT BLOCK	1
28	122152C1	PROBE BAND CYLINDER SUPPORT SIDE	2
29	122166C1	PROBE BAND CYLINDER CARRIAGE WASHER	4
30	122172C1	PROBE BAND CYLINDER CLAMP T-NUT	2
31	126417C1	LANCE PROBE SENSOR BRACKET ASSEMBLY	1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ADDED SENSOR ASSEMBLY	10/9/2020	MS



SECTION B-B
SCALE .25



DETAIL A
SCALE 0.30 : 1

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TOLERANCES: UNLESS OTHERWISE STATED:
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.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: T. LIAKOPOULOS

TITLE:

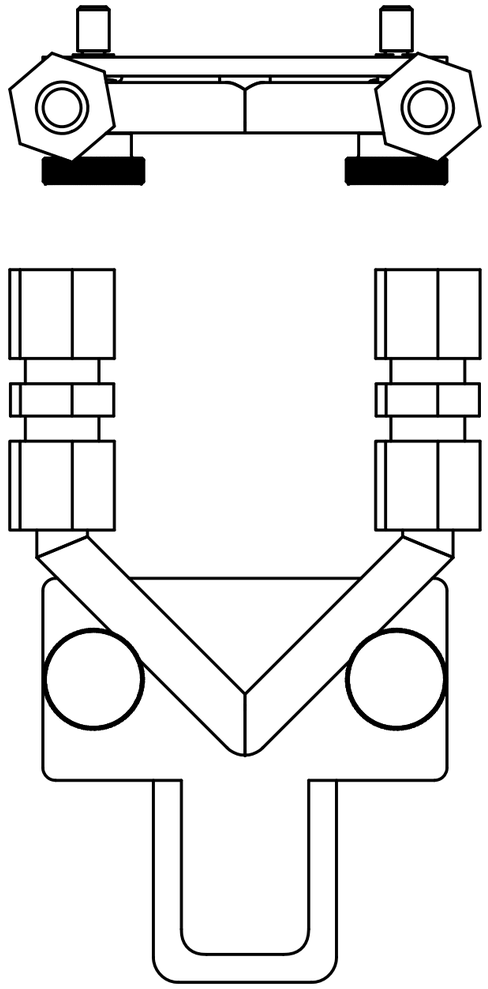
48" STROKE PROBE TOWER

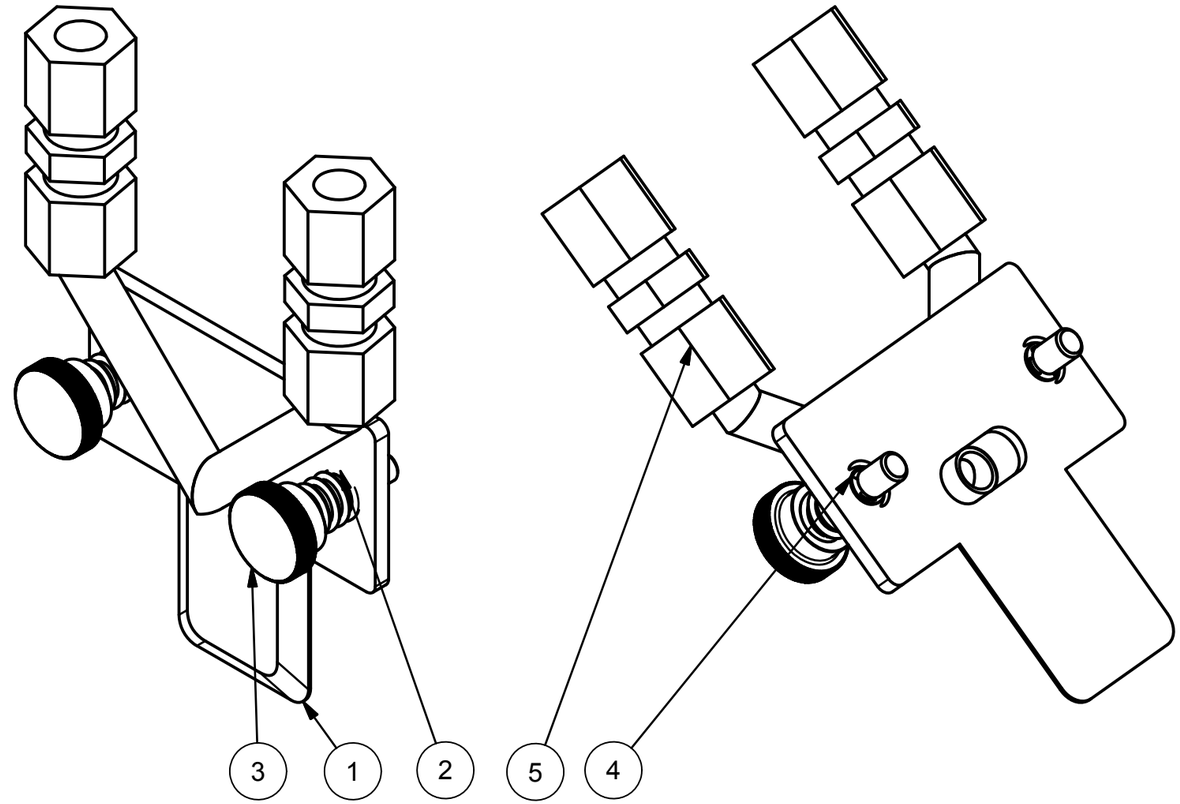
DWG NO.: MA270-0001 A

SCALE: N/A DATE: 9/16/2013 SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	120845C1	DUAL TUBE COVER PLATE	1
2	75100201	SPRING, PROBE COVER PLATE	2
3	75100401A	BOLT, PROBE COVER PLATE	2
4	75102101	E-RING RETAINER FOR 1/4 ROD	2
5	74200701	1/2 OD TUBE UNION	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	08/11/2017	CI
B	ADD FITTINGS	10/29/2018	CI





NOTES:
- FINISH: SEE BOM
- BREAK & DEBURR ALL EDGES & CORNERS
- MASS: N/A
- PARENT ASSY. NUMBER: MA270-0004
- FINISHED PART: YES

CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C.ILONTA

DRAWN BY: CILonta

TITLE:

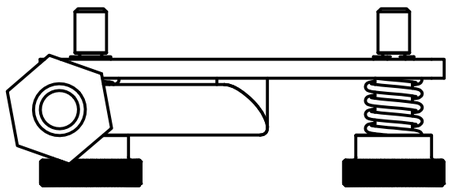
DUAL COVER PLATE ASSEMBLY

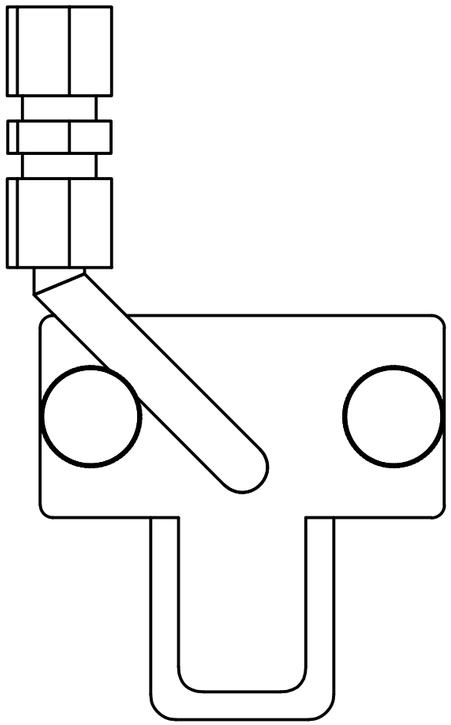
DWG NO.: MA271-0001 A

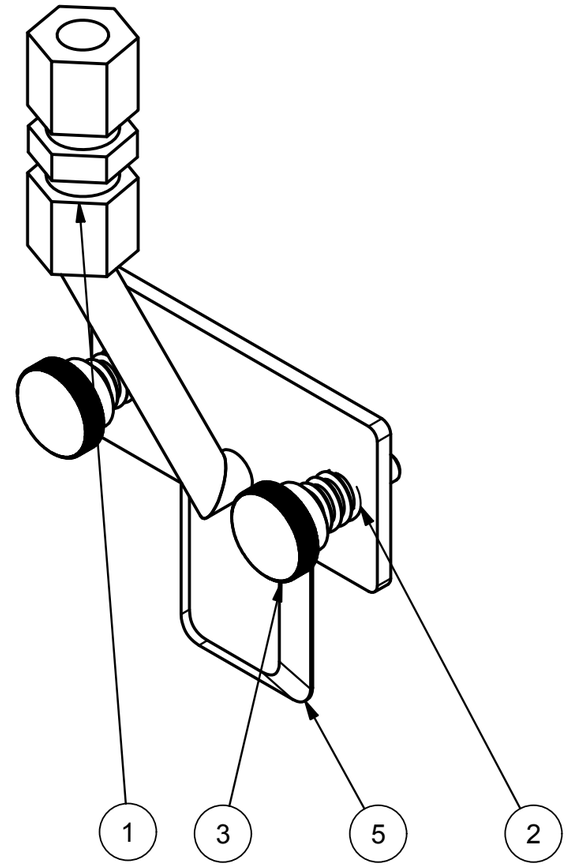
SCALE: N/A DATE: 8/10/2017 SHEET 1 OF 1

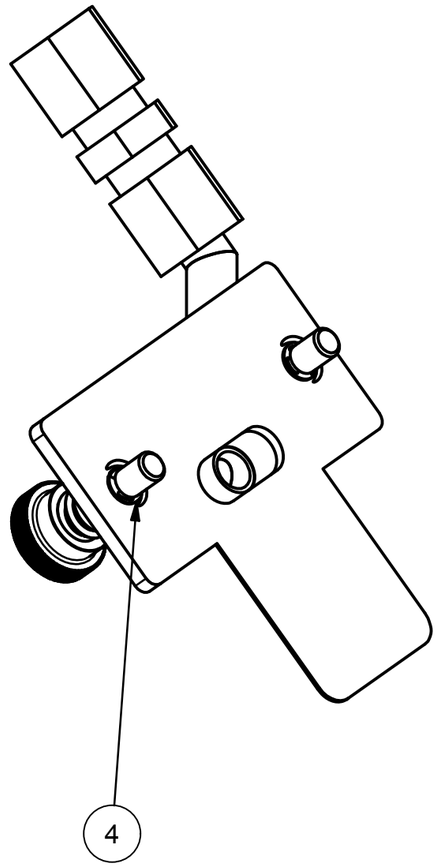
PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74200701	1/2 OD TUBE UNION	1
2	75100201	SPRING, PROBE COVER PLATE	2
3	75100401A	BOLT, PROBE COVER PLATE	2
4	75102101	E-RING RETAINER FOR 1/4 ROD	2
5	76101001	COVER PLATE, PROBE	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/29/2018	CI









CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C.ILONTA

DRAWN BY: CILonta

TITLE:

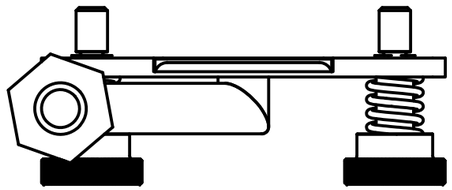
COVER PLATE ASSEMBLY

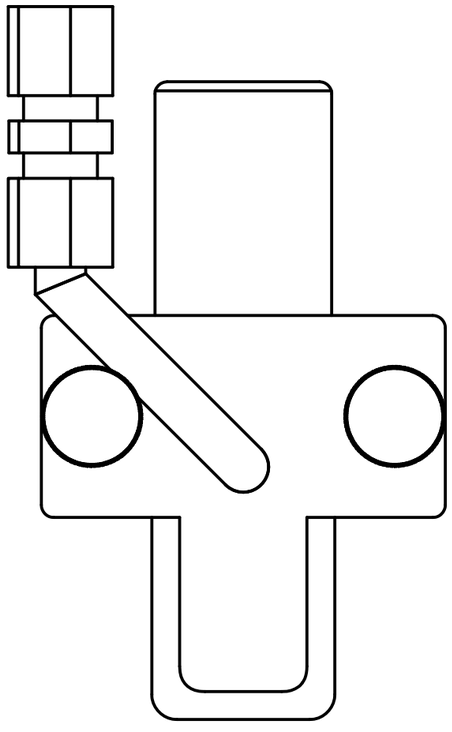
DWG NO.: MA271-0002 A

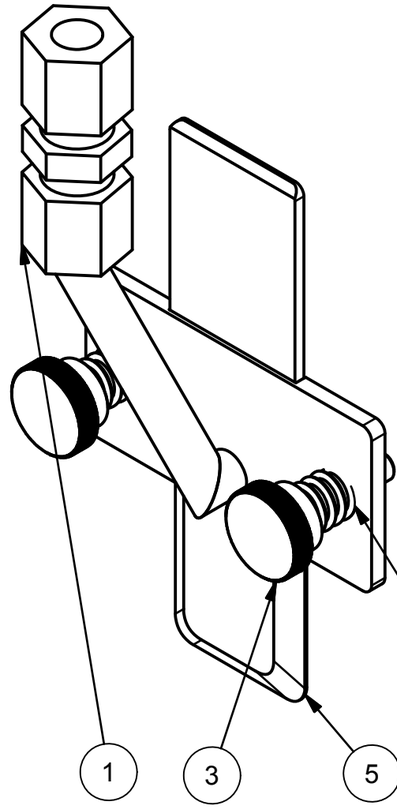
SCALE: N/A DATE: SHEET 1 OF 1

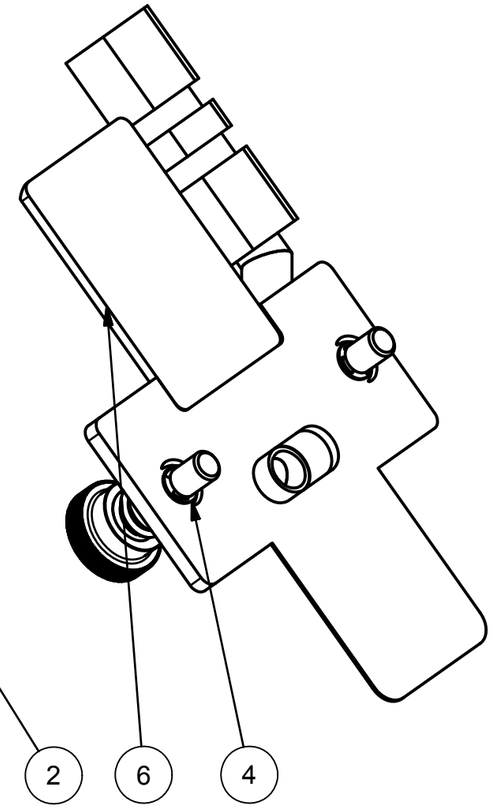
PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74200701	1/2 OD TUBE UNION	1
2	75100201	SPRING, PROBE COVER PLATE	2
3	75100401A	BOLT, PROBE COVER PLATE	2
4	75102101	E-RING RETAINER FOR 1/4 ROD	2
5	76119701	COVER PLATE HI-VACUUM PROBE	1
6	79100801	COVER PLATE EXTENDER	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/29/2018	CI









M-TEK INC.

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG: C.ILONTA

DRAWN BY: CILonta

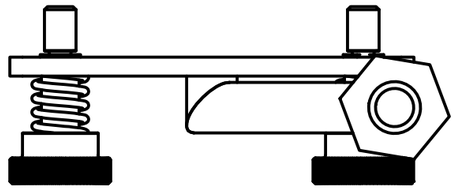
TITLE: COVER PLATE HIGH VACUUM ASSEMBLY

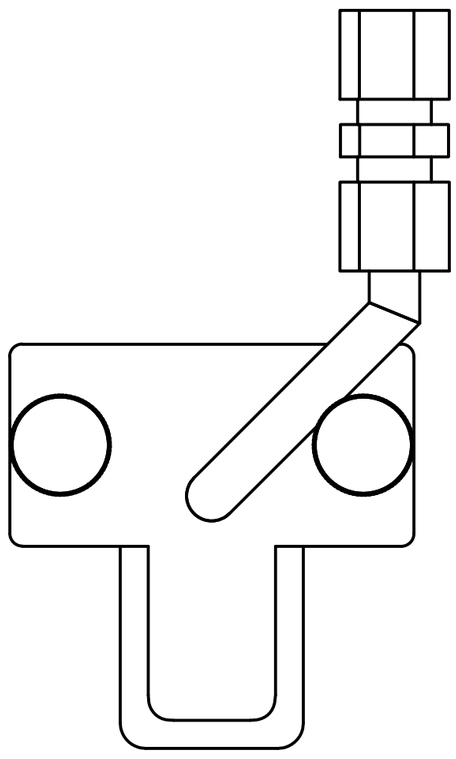
DWG NO.: MA271-0003 A

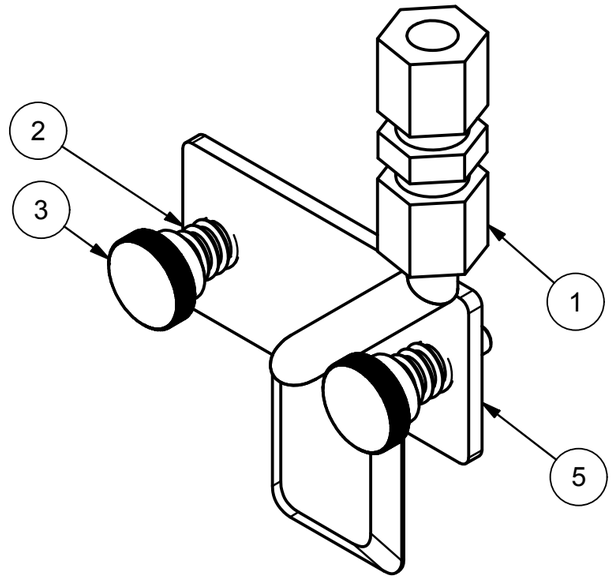
SCALE: N/A DATE: SHEET 1 OF 1

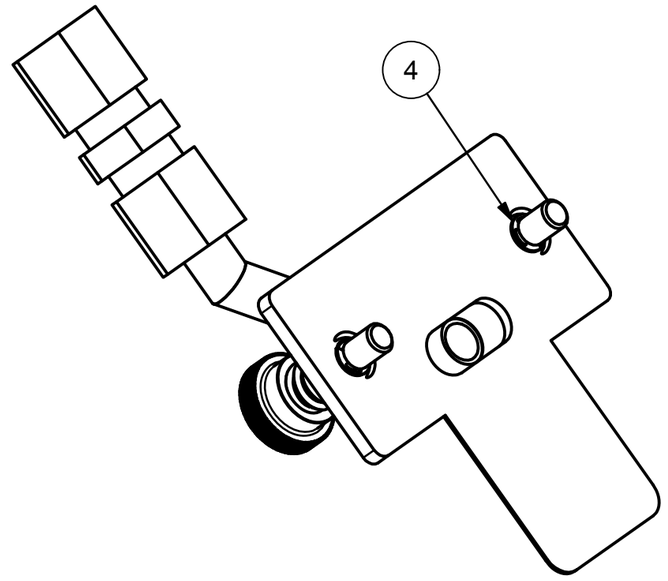
PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	74200701	1/2 OD TUBE UNION	1
2	75100201	SPRING, PROBE COVER PLATE	2
3	75100401A	BOLT, PROBE COVER PLATE	2
4	75102101	E-RING RETAINER FOR 1/4 ROD	2
5	139234C1	COVER PLATE, PROBE RH	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	4/10/2024	PV









CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: PV

TITLE:

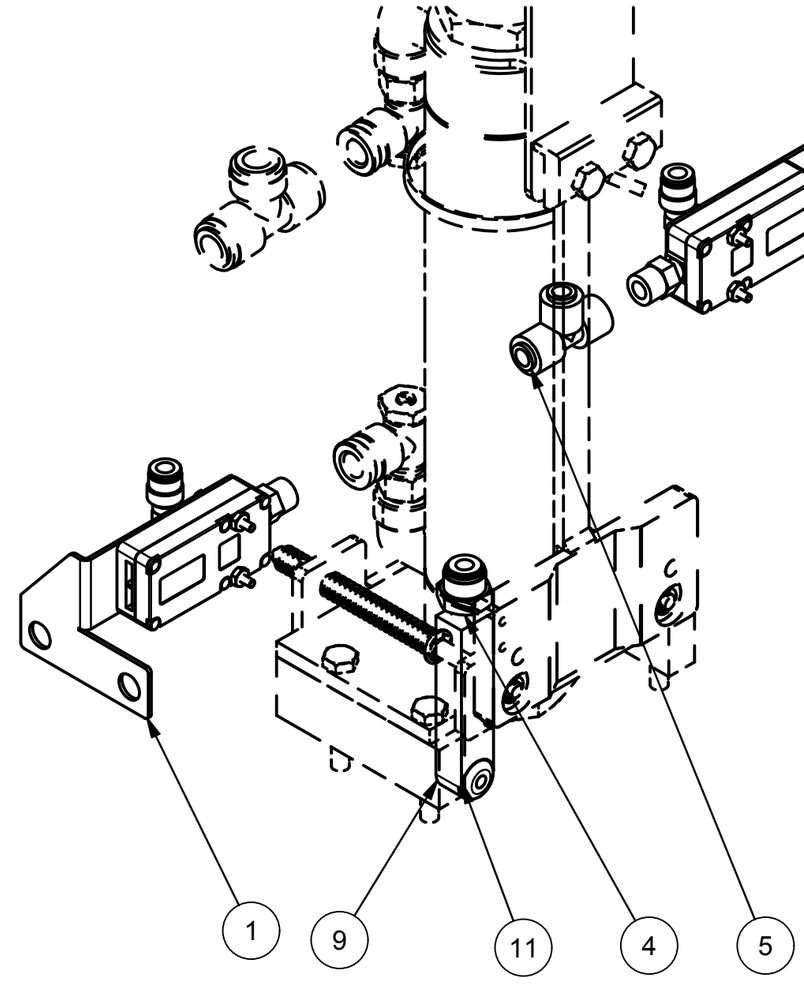
COVER PLATE ASSEMBLY, RH

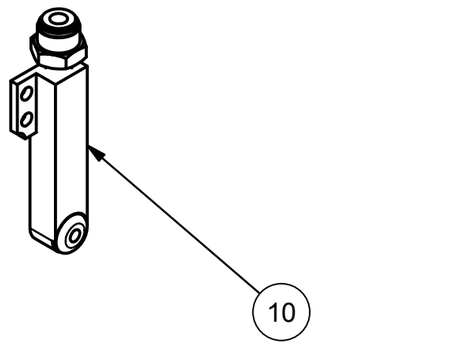
DWG NO.: MA271-0004 A

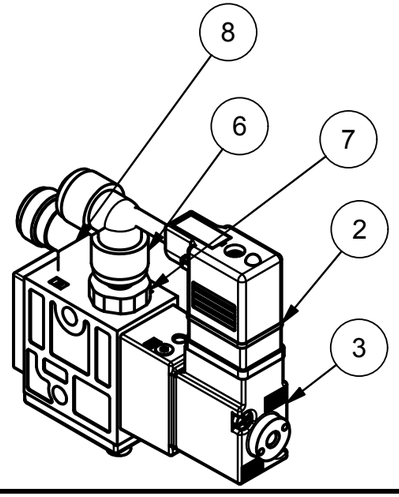
SCALE: N/A DATE: 4/9/2024 SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	52100701	PIAB Bag Gripper Assembly with Bracket	2
2	71607503	MAC VALVE 11mm CABLE 3M LONG	1
3	73100201	24 vac stacking version with DIN connector	1
4	74202701	1/4 O.D. TUBE X 1/8 NPT MALE CONNECTOR, PLASTIC	2
5	74203401	1/4 O.D. TUBE, UNION TEE, PLASTIC	1
6	74203801	3/8 O.D. TUBE, UNION ELBOW	1
7	74204701	3/8 O.D. TUBE X 3/8 NPT STEM ADAPTER, PLASTIC	1
8	74205201	3/8 OD TUBE x 3/8 NPT MALE FIXED ELBOW, PLASTIC	1
9	76100701	BAG GRIPPER WELDMENT, LEFT HAND	1
10	76100801	BAG GRIPPER WELDMENT, RIGHT HAND	1
11	79500601	PLUG GROMMET 3/16 I.D., 5/8 O.D., 5/16 PANEL HOLE	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/01/2018	CI







CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: PIAB VACUUM GRIPPERS ASSEMBLY

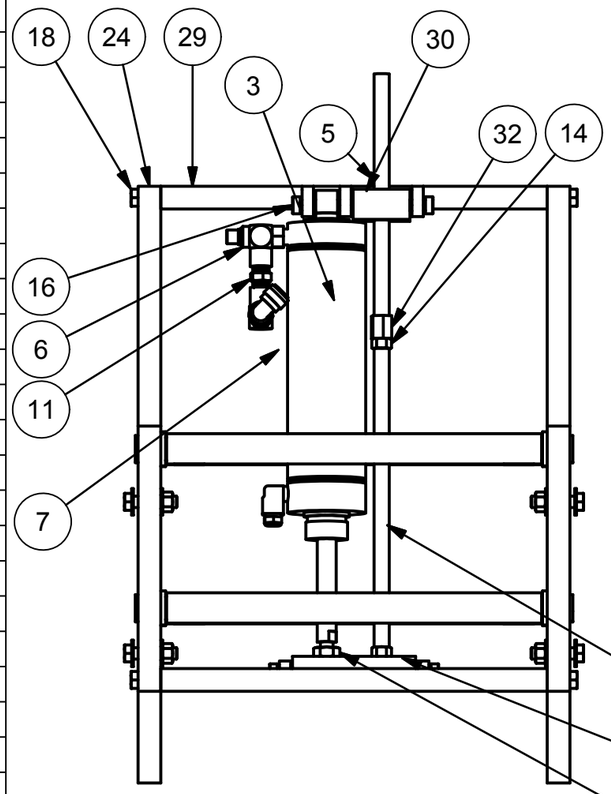
DWG NO.: MA261-0005 A

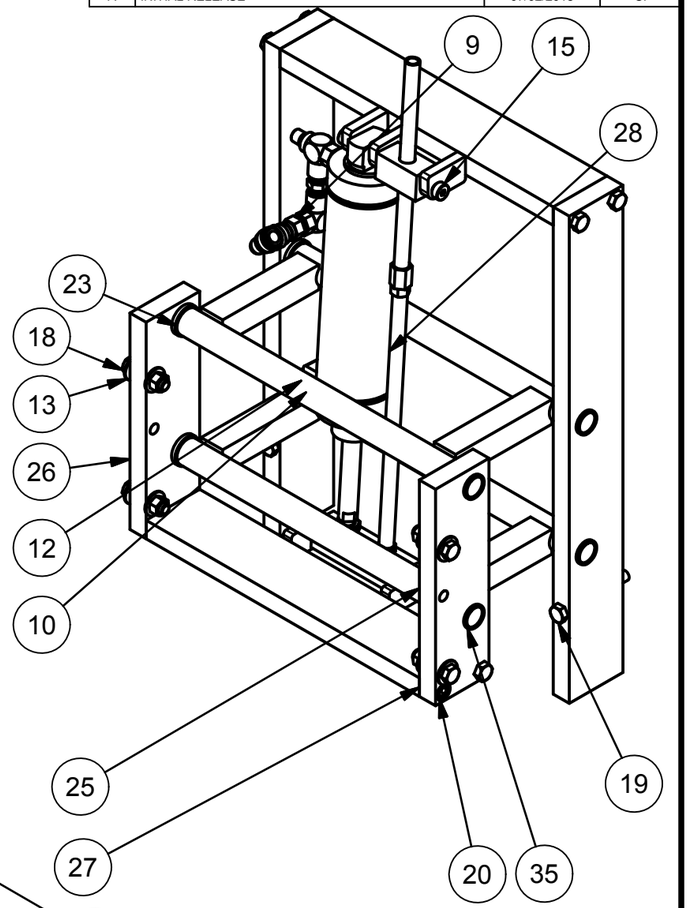
SCALE: N/A | DATE: | SHEET 1 OF 1

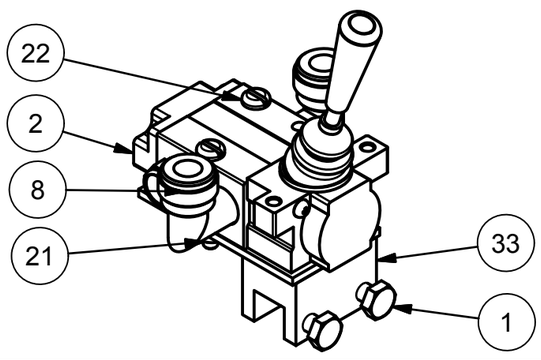
PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	7516601	1/4-28 X 1/2 LNG HEX HEAD CAP SCREW, S/S	2
2	73101501	Schrader Bellows joystick control valve, with internal spring	1
3	73200301	CYLINDER, HI-LO HEAD	1
5	73300301	TUBING 1/2 OD NYLON	1
6	73501101	1/4 NPT FLOW CONTROL VALVE	2
7	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
8	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	2
9	74204301	3/8 OD TUBE x 1/4 NPT FEMALE CONNECTOR, PLASTIC	1
10	74300101	1/4 NPT BREATHER VENT	2
11	74303701	1/4 NPT hex nipple - long	1
12	74304401	1/4 STREET ELBOW, EXTRUDED	1
13	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	8
14	75104201	3/8-16 HEX NUT, S/S	6
15	75104701	Ø3/8 X 1/2 SOCKET HEAD SHOULDER SCREW, S/S	3
16	75104801	Ø3/8 X 1-3/4 SOCKET HEAD SHOULDER SCREW, S/S	1
17	75105101	1/2-20 HEX JAM NUT, S/S	1
18	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	10
19	75108301	3/8-16 X 3 LNG HEX HEAD CAP SCREW, S/S	2
20	75108401	3/8-16 X 1 SOCKET HEAD CAP SCREW, S/S	2
21	75118601	#10-32 HEX NUT, S/S	2
22	75119301H	#10-32 X 1-1/2 PAN HEAD, SLOTTED, S/S	2
23	76107501	PARALLEL LINK HI-LO HEAD	2
24	76107601	FRAME, HEAD MOUNT, HI-LO HEAD	2
25	76107702	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT LEFT HAND	1
26	76107802	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT RIGHT HAND	1
27	76107901	LOWER CYLINDER MOUNTING FRAME HI-LO HEAD	1
28	76108001	SUPPORT TUBE HI-LO HEAD	1
29	76108101	UPPER CYLINDER MOUNTING FRAME HI-LO HEAD	1
30	76109000	STOP ROD TRUNION HI-LO HEAD	1
31	76109101	CYLINDER ROD TRUNNION, HI-LO HEAD	1
32	76109201	ROD STOP NUT FOR HI-LO HEAD	1
33	76109701	JOYSTICK MTG. BRACKET	1
34	76118201	THREADED ROD FOR HI-LO HEAD	1
35	79100101	BUSHING, BRONZE 3/4 ID X 7/8 OD	8

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/02/2018	CI







M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

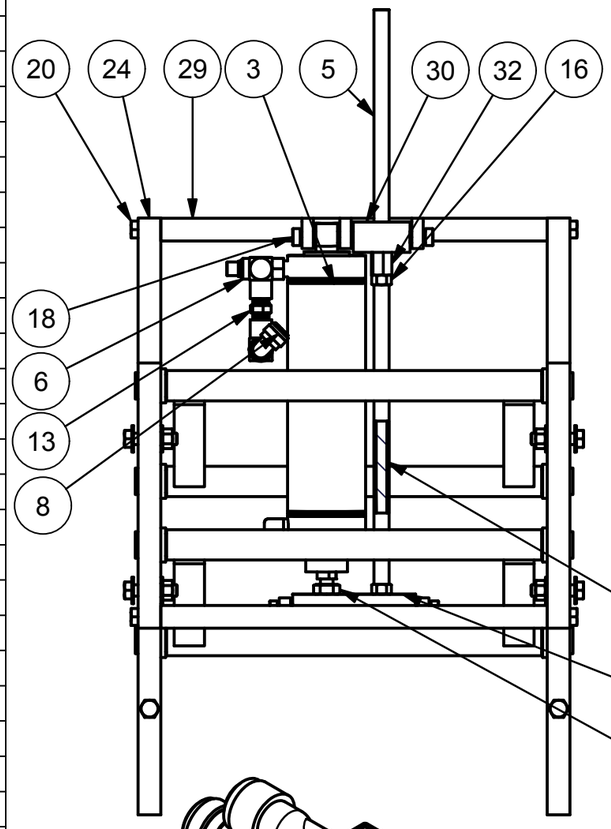
TITLE: MK3 HILO HEAD MOUNT WITH JOYSTICK ASSEMBLY

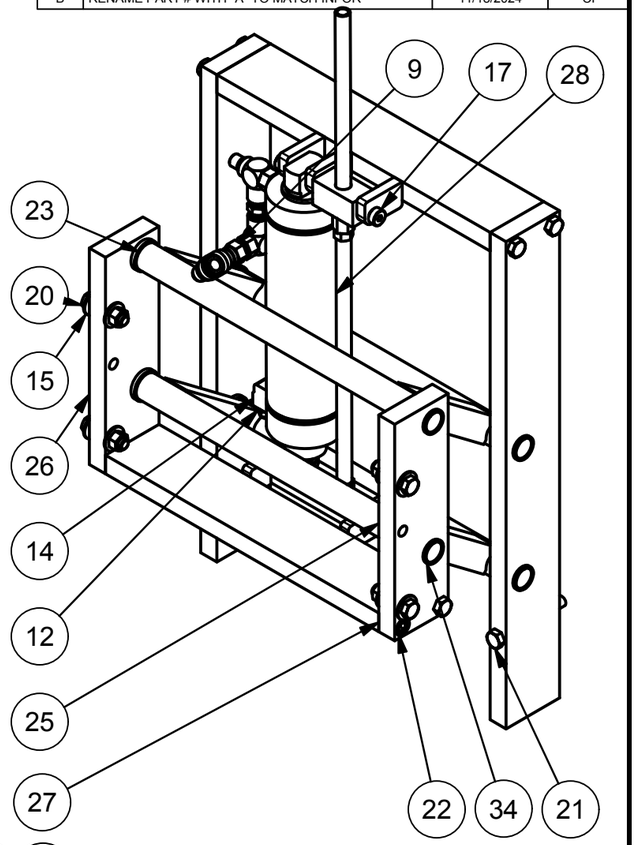
DWG NO.: MA015-0008

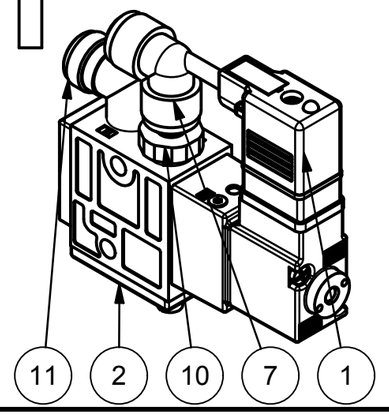
SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	71607503	MAC VALVE 11mm CABLE 3M LONG	1
2	73100201	24 vac stacking version with DIN connector	1
3	73200301	CYLINDER, HI-LO HEAD	1
5	73300301	TUBING 1/2 OD NYLON	1
6	73501101	1/4 NPT FLOW CONTROL VALVE	2
7	74203801	3/8 O.D. TUBE, UNION ELBOW	1
8	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	1
9	74204301	3/8 OD TUBE x 1/4 NPT FEMALE CONNECTOR, PLASTIC	1
10	74204701	3/8 O.D. TUBE X 3/8 NPT STEM ADAPTER, PLASTIC	1
11	74205201	3/8 OD TUBE x 3/8 NPT MALE FIXED ELBOW, PLASTIC	1
12	74300101	1/4 NPT BREATHER VENT	1
13	74303701	1/4 NPT hex nipple - long	1
14	74304401	1/4 STREET ELBOW, EXTRUDED	1
15	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	8
16	75104201	3/8-16 HEX NUT, S/S	6
17	75104701	Ø3/8 X 1/2 SOCKET HEAD SHOULDER SCREW, S/S	3
18	75104801	Ø3/8 X 1-3/4 SOCKET HEAD SHOULDER SCREW, S/S	1
19	75105101	1/2-20 HEX JAM NUT, S/S	1
20	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	10
21	75108301	3/8-16 X 3 LNG HEX HEAD CAP SCREW, S/S	2
22	75108401	3/8-16 X 1 SOCKET HEAD CAP SCREW, S/S	2
23	76107501A	PARALLEL LINK HI-LO HEAD	2
24	76107601A	FRAME, HEAD MOUNT, HI-LO HEAD	2
25	76107702A	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT LEFT HAND	1
26	76107802A	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT RIGHT HAND	1
27	76107901A	LOWER CYLINDER MOUNTING FRAME HI-LO HEAD	1
28	76108001A	SUPPORT TUBE HI-LO HEAD	1
29	76108101A	UPPER CYLINDER MOUNTING FRAME HI-LO HEAD	1
30	76109000A	STOP ROD TRUNION HI-LO HEAD	1
31	76109101A	CYLINDER ROD TRUNNION, HI-LO HEAD	1
32	76109201A	ROD STOP NUT FOR HI-LO HEAD	1
33	76118201A	THREADED ROD FOR HI-LO HEAD	1
34	79100101	BUSHING, BRONZE 3/4 ID X 7/8 OD	8







REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/02/2018	CI
B	RENAME PART # WITH "A" TO MATCH INFOR	11/18/2024	CI

CV•TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 HILO HEAD MOUNT WITH VALVE CONTROL

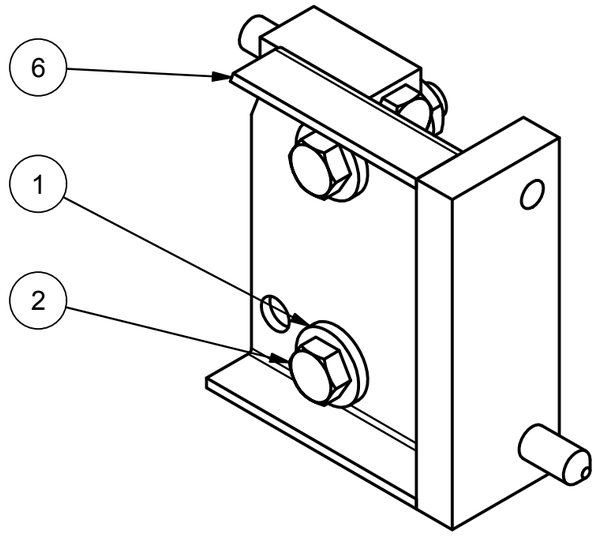
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

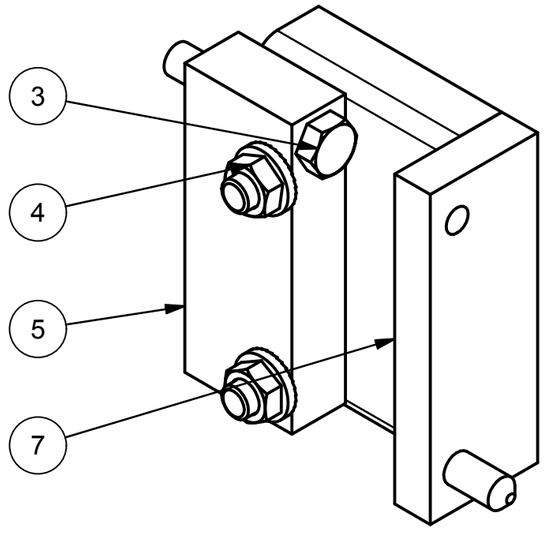
DWG NO.: MA015-0009 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108745C1	3/8 FLAT WASHER, 0.875 O.D., 0.125 THCK, S/S	4
2	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
3	75110601	3/8-16 X 2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	2
4	75111101	3/8-16 SMALL FLANGE HEX NUT W/ SERRATION S/S	4
5	76204901	FRONT PIVOT BLOCK, MARK III/IV HEAD SPACER	2
6	76207001	SPACER, HEAD MOUNTING, LEFT HAND 2.25 0/20 DEG HI-LO HEAD	1
7	76207101	SPACER, HEAD MOUNTING, RIGHT HAND 2.25 0/20 DEG HI-LO HEAD	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/02/2018	CI





CV·TEK

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 20/90 DEG ADAPTER HILO ASM

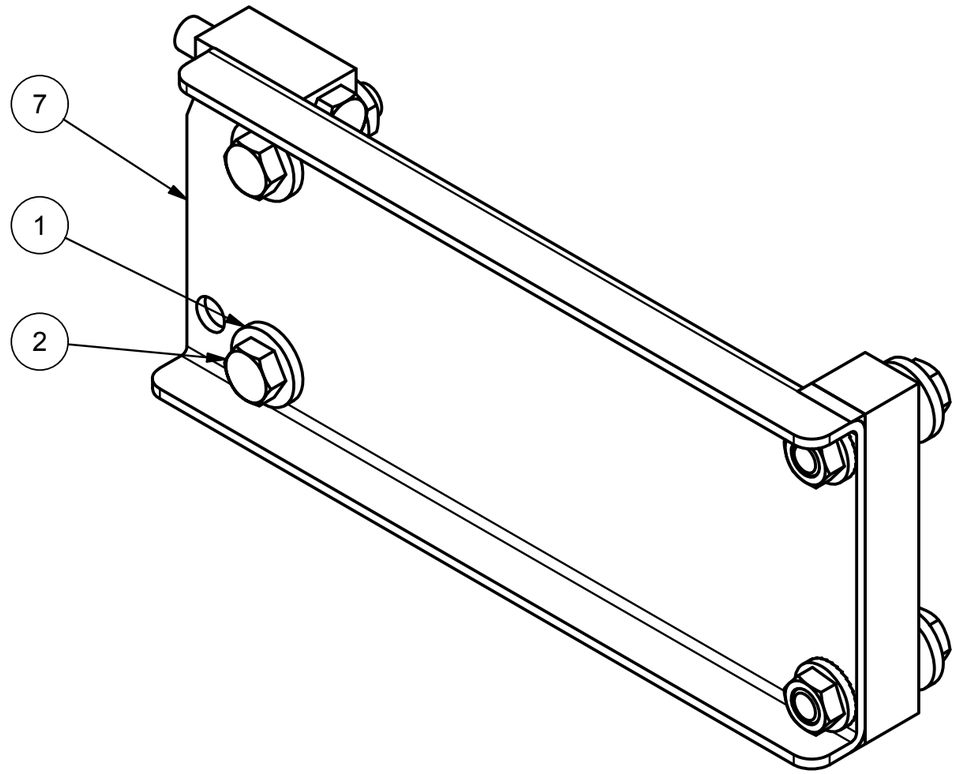
TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

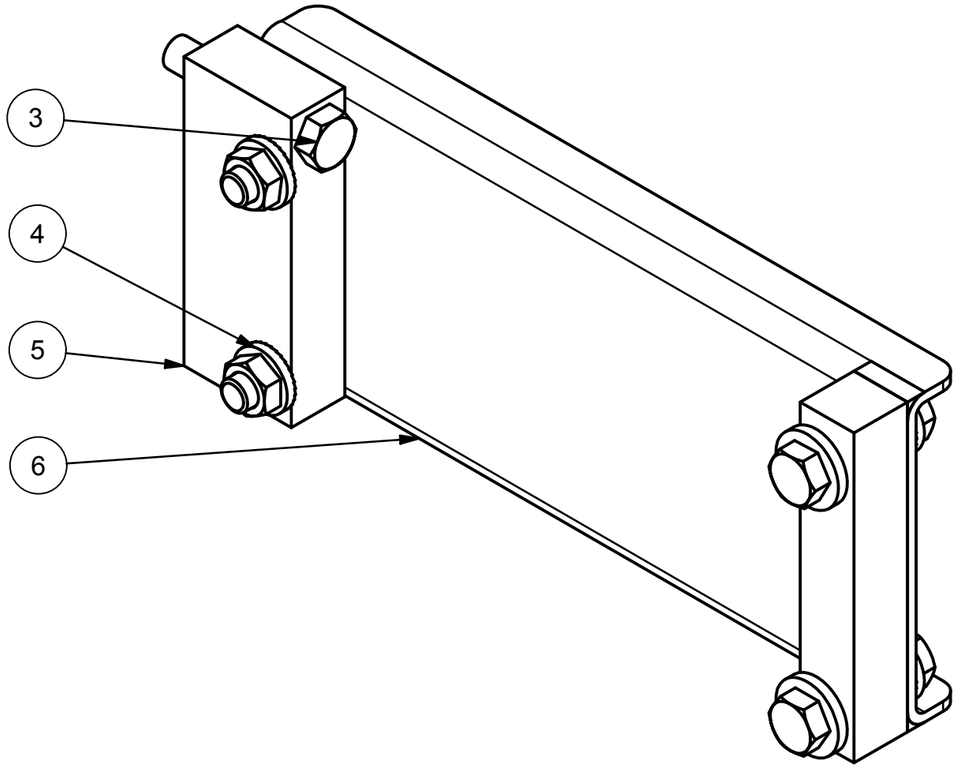
DWG NO.: MA015-0010 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108745C1	3/8 FLAT WASHER, 0.875 O.D., 0.125 THCK, S/S	8
2	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	8
3	75110601	3/8-16 X 2 LNG SPECIAL 7/8 SHANK HEX HEAD CAP SCREW, S/S	2
4	75111101	3/8-16 SMALL FLANGE HEX NUT W/ SERRATION S/S	8
5	76204901	FRONT PIVOT BLOCK, MARK III/IV HEAD SPACER	2
6	76205001	SPACER, HEAD REAR RIGHT HAND MARK III/IV, 7.82 20 DEGREE	1
7	76205101	SPACER, HEAD REAR LEFT HAND MARK III/IV, 7.82 20 DEGREE	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/02/2018	CI





CV·TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

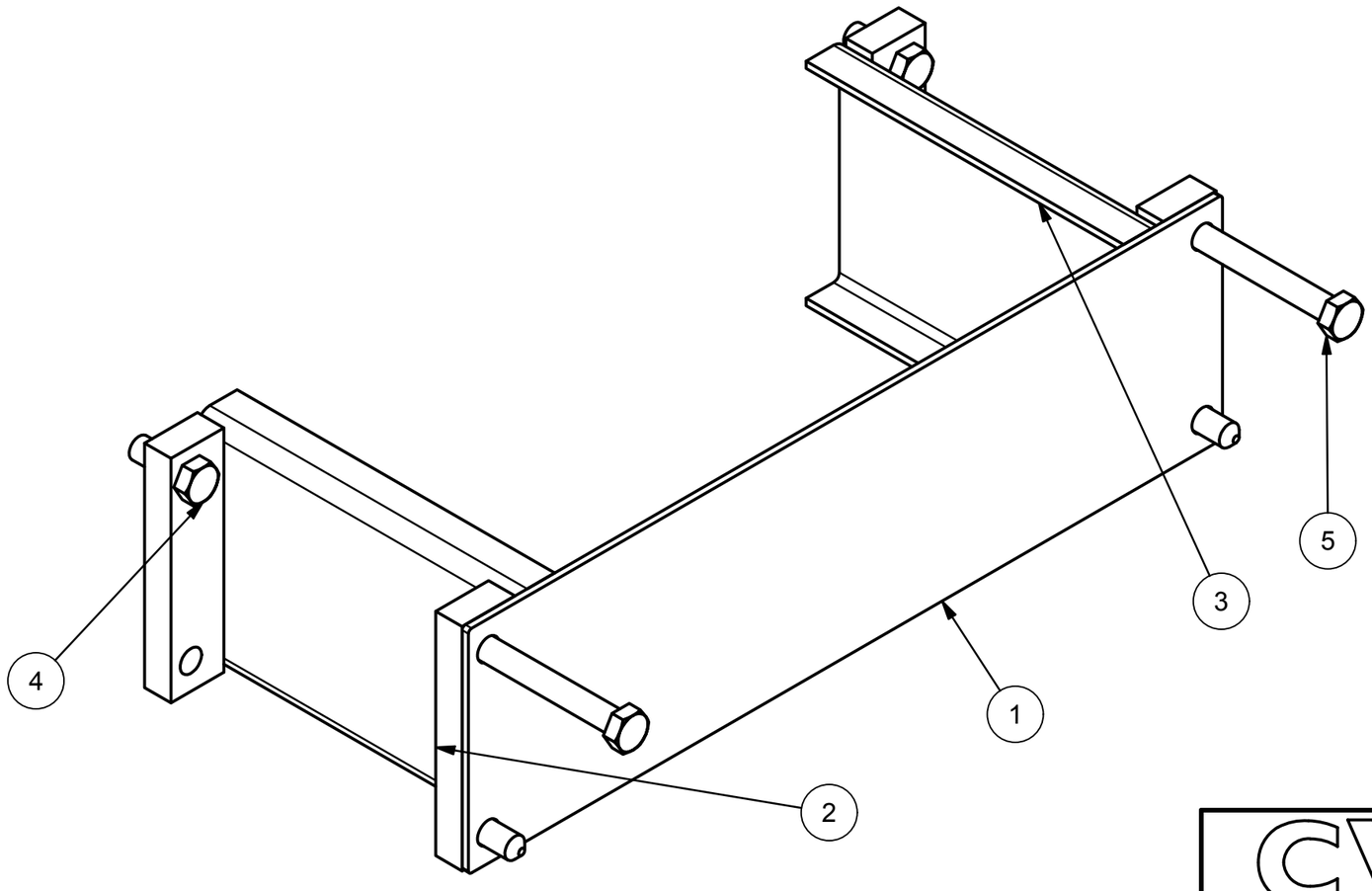
TITLE: MK3 20/90 DEG HEAD MOUNT ASM

DWG NO.: MA015-0011 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	76111601A	TIE BAR, HI-LO HEAD SPACER	1
2	76202401	SPACER, 6 LONG RIGHT HAND MARK III BULK BIN MARK I/II HEAD	1
3	76202501	SPACER, 6 LONG LEFT HAND MARK III BULK BIN MARK I/II HEAD	1
4	75107901	3/8-16 X 1 LNG HEX HEAD CAP SCREW, S/S	2
5	75113201	3/8-16 X 3-1/4 LNG HEX HEAD CAP SCREW, S/S	2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/02/2018	N.B



CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

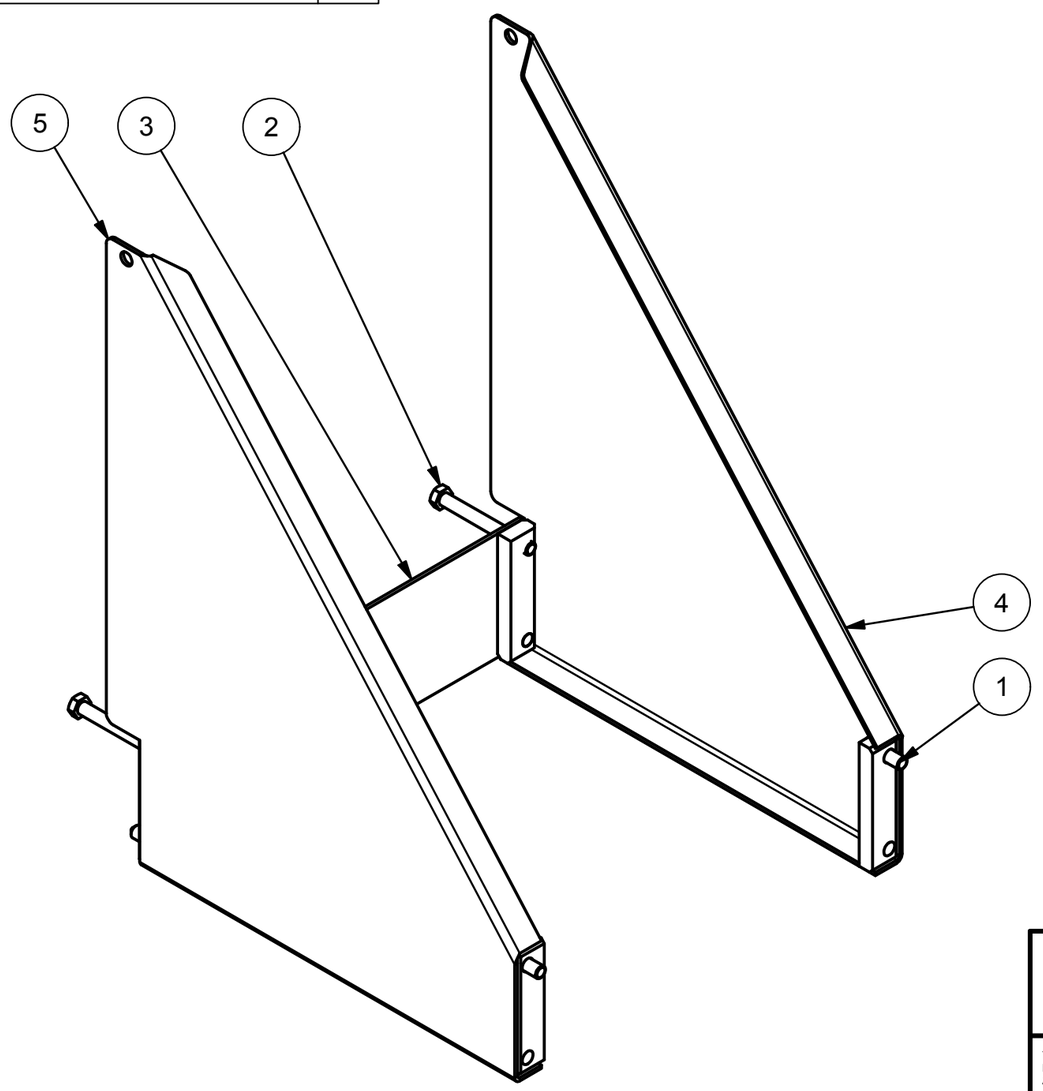
TITLE: MK3 BULK BIN HILO HEAD MOUNT ADAPTER

DWG NO.: MA015-0012 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	75107901	3/8-16 X 1 LNG HEX HEAD CAP SCREW, S/S	2
2	75113201	3/8-16 X 3-1/4 LNG HEX HEAD CAP SCREW, S/S	2
3	76111601A	TIE BAR, HI-LO HEAD SPACER	1
4	76209301A	SPACER, 14.00 IN. RIGHT HAND HI-LO HEAD MARK III BULK BIN	1
5	76209401A	SPACER, 14.00 IN. LEFT HAND HI-LO HEAD MARK III BULK BIN	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/03/2018	N.B



CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
FRACTIONAL = ± .015
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 BULK BIN HILO HEAD MOUNT 14 IN ADAPTER

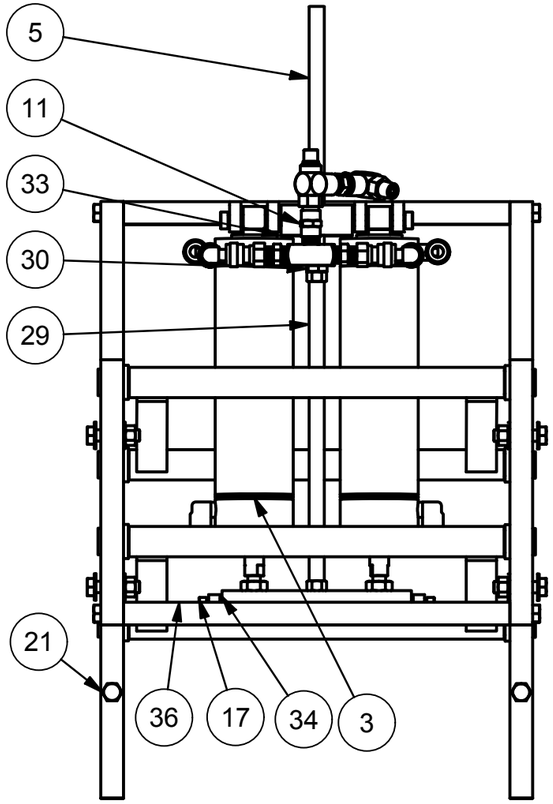
DWG NO.: MA015-0013 A

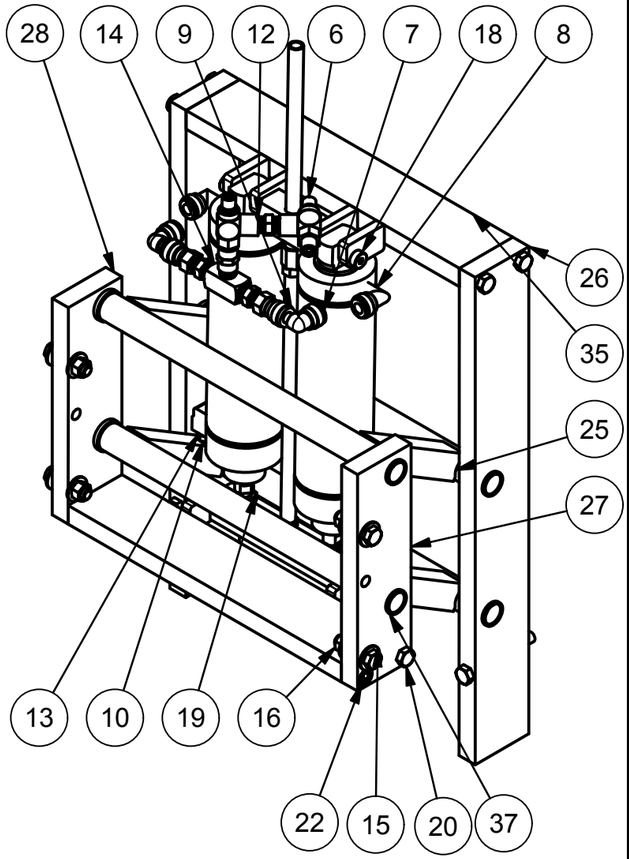
SCALE: N/A DATE: SHEET 1 OF 1

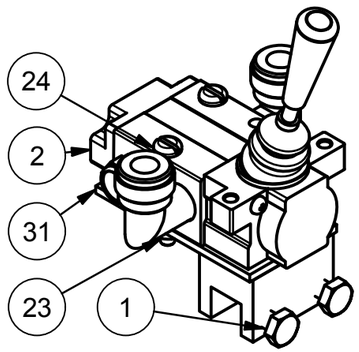
PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	75160601	1/4-28 X 1/2 LNG HEX HEAD CAP SCREW, S/S	2
2	73101501	Schrader Bellows joystick control valve, with internal spring	1
3	73200301	CYLINDER, HI-LO HEAD	2
5	73300301	TUBING 1/2 OD NYLON	1
6	73501101	1/4 NPT FLOW CONTROL VALVE	2
7	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	2
8	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	4
9	74204301	3/8 OD TUBE x 1/4 NPT FEMALE CONNECTOR, PLASTIC	2
10	74300101	1/4 NPT BREATHER VENT	3
11	74301101	1/4 FEMALE HEX COUPLING	1
12	74303701	1/4 NPT hex nipple - long	3
13	74304401	1/4 STREET ELBOW, EXTRUDED	2
14	74306301	1/4 MALE BRANCH TEE EXTRUDED	1
15	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	8
16	75104201	3/8-16 HEX NUT, S/S	6
17	75104701	Ø3/8 X 1/2 SOCKET HEAD SHOULDER SCREW, S/S	2
18	75104801	Ø3/8 X 1-3/4 SOCKET HEAD SHOULDER SCREW, S/S	2
19	75105101	1/2-20 HEX JAM NUT, S/S	2
20	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	10
21	75108301	3/8-16 X 3 LNG HEX HEAD CAP SCREW, S/S	2
22	75108401	3/8-16 X 1 SOCKET HEAD CAP SCREW, S/S	2
23	75118601	#10-32 HEX NUT, S/S	2
24	75119301H	#10-32 X 1-1/2 PAN HEAD, SLOTTED, S/S	2
25	76107501A	PARALLEL LINK HI-LO HEAD	2
26	76107601A	FRAME, HEAD MOUNT, HI-LO HEAD	2
27	76107702A	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT LEFT HAND	1
28	76107802A	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT RIGHT HAND	1
29	76108001A	SUPPORT TUBE HI-LO HEAD	1
30	76109201A	ROD STOP NUT FOR HI-LO HEAD	1
31	76109701A	JOYSTICK MTG. BRACKET	1
32	76118201A	THREADED ROD FOR HI-LO HEAD	1
33	76123401A	STOP ROD TRUNION HI-LO DUAL HEAD	1
34	76123501A	CYLINDER ROD TRUNNION, HI-LO DUAL HEAD	1
35	76123601A	UPPER CYLINDER MOUNTING FRAME HI-LO DUAL HEAD	1
36	76123701A	LOWER CYLINDER MOUNTING FRAME HI-LO DUAL HEAD	1
37	79100101	BUSHING, BRONZE 3/4 ID X 7/8 OD	8

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/09/2018	CI
B	RENAME PARTS # WITH "A" TO MATCH INFOR	11/18/2024	CI







CV•TEK

TOLERANCES: UNLESS OTHERWISE STATED:
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.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: MK3 DOUBLE CYLINDER HILO HEAD MOUNT WITH JOYSTICK ASSEMBLY

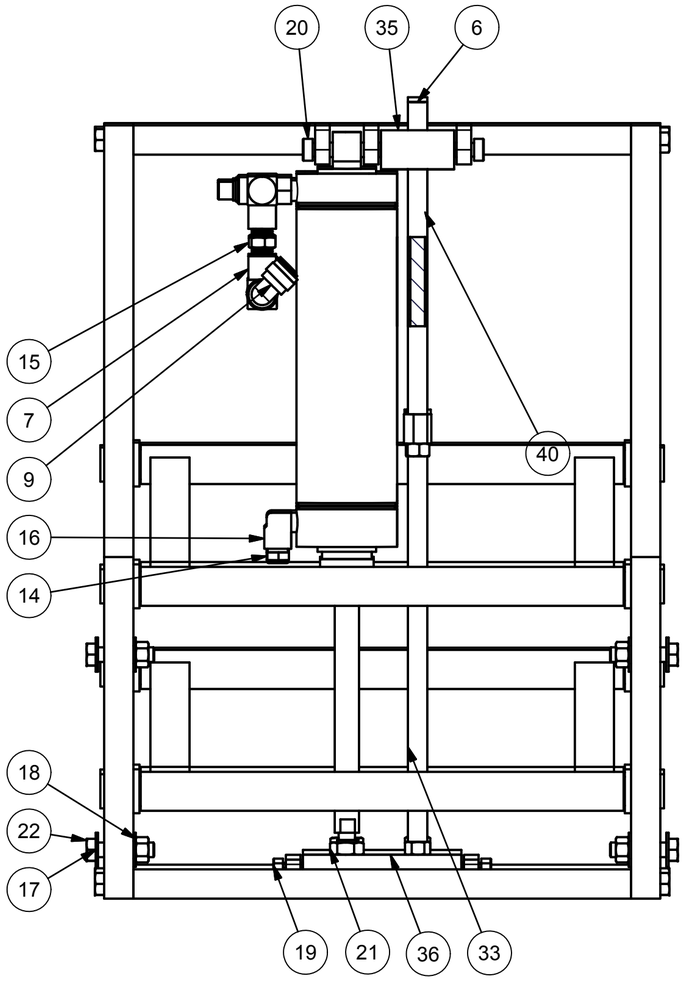
DWG NO.: MA015-0018 B

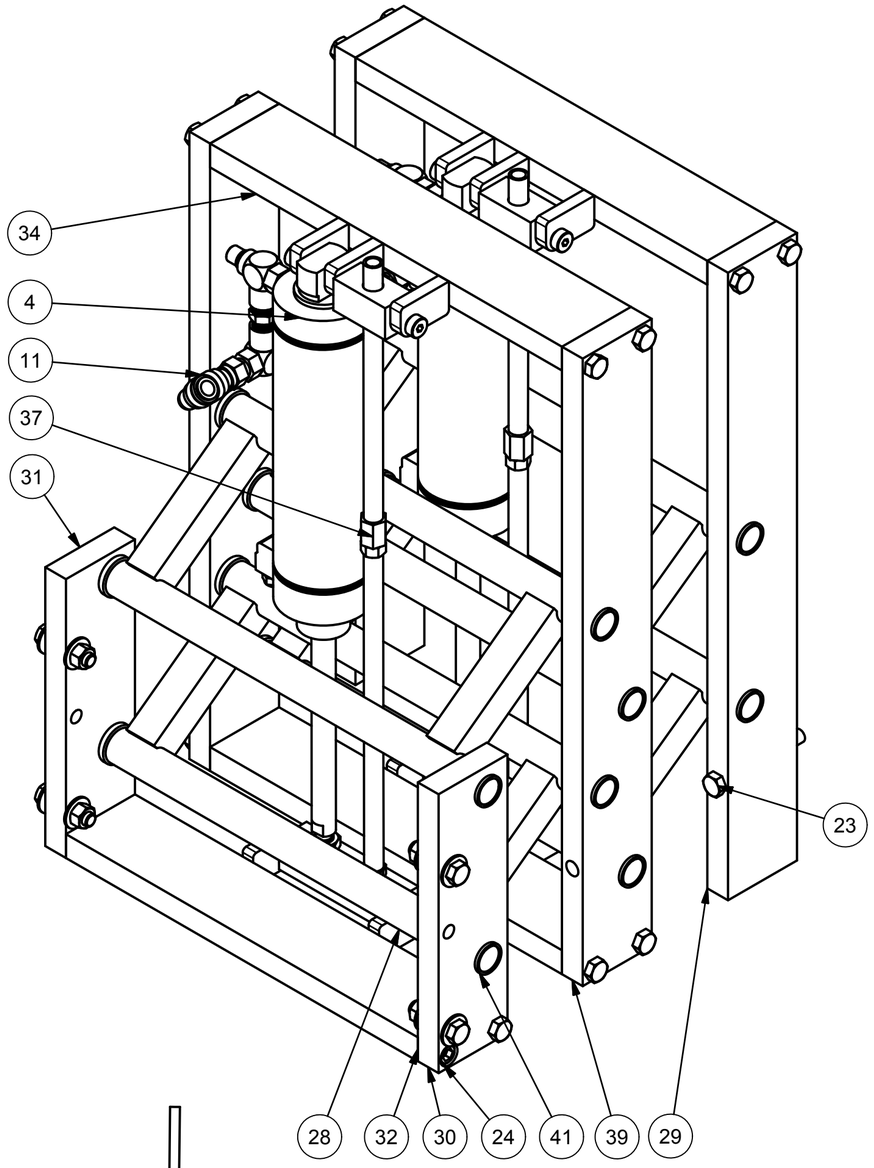
SCALE: N/A DATE: SHEET 1 OF 1

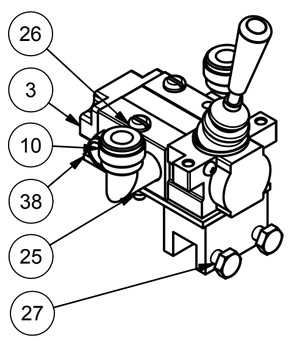
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	07/03/2018	N.B

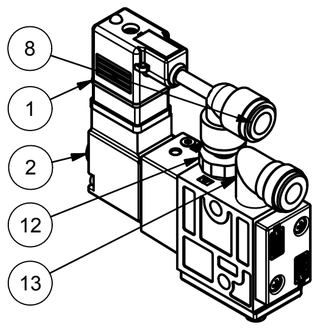
PARTS LIST

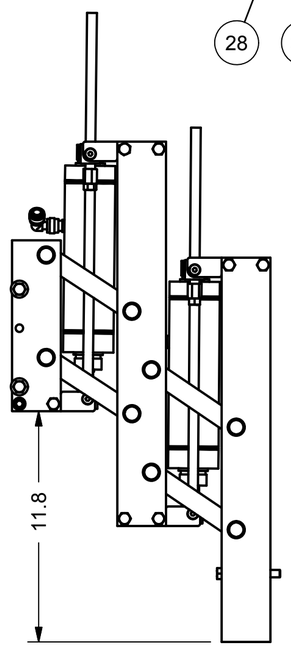
ITEM	PART NO.	DESCRIPTION	QTY
1	71607503	MAC VALVE 11mm CABLE 3M LONG	1
2	73100201	24 vac stacking version with DIN connector	1
3	73101501	Schrader Bellows joystick control valve, with internal spring	1
4	73200301	CYLINDER, HI-LO HEAD	2
6	73300301	TUBING 1/2 OD NYLON	2
7	73501101	1/4 NPT FLOW CONTROL VALVE	4
8	74203801	3/8 O.D. TUBE, UNION ELBOW	1
9	74204001	3/8 OD TUBE x 3/8 OD PLUG IN ELBOW, PLASTIC	2
10	74204201	3/8 O.D. TUBE X 1/4 NPT FIXED ELBOW, MALE, PLASTIC	2
11	74204301	3/8 OD TUBE x 1/4 NPT FEMALE CONNECTOR, PLASTIC	2
12	74204701	3/8 O.D. TUBE X 3/8 NPT STEM ADAPTER, PLASTIC	1
13	74205201	3/8 OD TUBE x 3/8 NPT MALE FIXED ELBOW, PLASTIC	1
14	74300101	1/4 NPT BREATHER VENT	3
15	74303701	1/4 NPT hex nipple - long	2
16	74304401	1/4 STREET ELBOW, EXTRUDED	2
17	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	8
18	75104201	3/8-16 HEX NUT, S/S	8
19	75104701	Ø3/8 X 1/2 SOCKET HEAD SHOULDER SCREW, S/S	6
20	75104801	Ø3/8 X 1-3/4 SOCKET HEAD SHOULDER SCREW, S/S	2
21	75105101	1/2-20 HEX JAM NUT, S/S	2
27	75106601	1/4-28 X 1/2 LNG HEX HEAD CAP SCREW, S/S	2
22	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	18
23	75108301	3/8-16 X 3 LNG HEX HEAD CAP SCREW, S/S	2
24	75108401	3/8-16 X 1 SOCKET HEAD CAP SCREW, S/S	2
25	75118601	#10-32 HEX NUT, S/S	2
26	75119301H	#10-32 X 1-1/2 PAN HEAD, SLOTTED, S/S	2
28	76107501	PARALLEL LINK HI-LO HEAD	4
29	76107601	FRAME, HEAD MOUNT, HI-LO HEAD	2
30	76107702	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT LEFT HAND	1
31	76107802	FRAME, HI-LO HEAD MARK III/IV PYLON MOUNT RIGHT HAND	1
32	76107901	LOWER CYLINDER MOUNTING FRAME HI-LO HEAD	2
33	76108001	SUPPORT TUBE HI-LO HEAD	2
34	76108101	UPPER CYLINDER MOUNTING FRAME HI-LO HEAD	2
35	76109000	STOP ROD TRUNION HI-LO HEAD	2
36	76109101	CYLINDER ROD TRUNNION, HI-LO HEAD	2
37	76109201	ROD STOP NUT FOR HI-LO HEAD	2
38	76109701	JOYSTICK MTG. BRACKET	1
39	76112601	FRAME, CENTER, DUAL HI-LO HEAD	2
40	76118201	THREADED ROD FOR HI-LO HEAD	2
41	79100101	BUSHING, BRONZE 3/4 ID X 7/8 OD	16











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DRILLED HOLE: STANDARD S.A.E.

M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE: DUAL HI-LO HEAD ASSEMBLY MARK III/IV

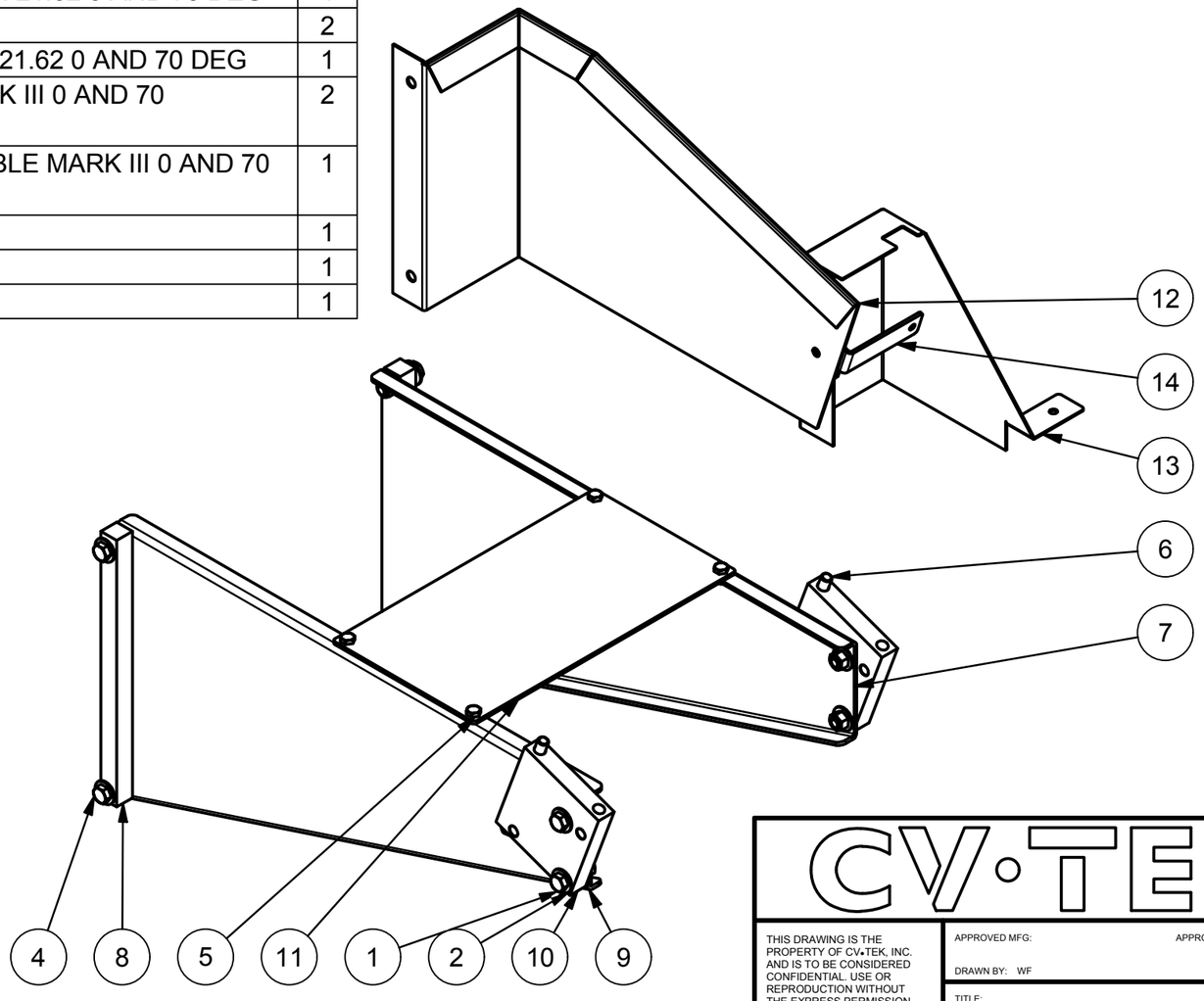
DWG NO.: 66102101

SCALE: N/A | DATE: | SHEET 1 OF 1

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	112181C1	3/8-16 X 1-3/8 LNG HEX HEAD CAP SCREW, S/S, (FULL THD)	4
2	75103401	3/8 FLAT WASHER, 0.875 O.D., 0.06 THCK, S/S	12
3	75104201	3/8-16 HEX NUT, S/S	8
4	75108101	3/8-16 X 1-1/2 LNG HEX HEAD CAP SCREW, S/S	4
5	75109501	1/4-20 X 1/2 LNG HEX HEAD CAP SCREW, S/S	4
6	75114901	3/8-16 X 4-1/2 LNG HEX HEAD CAP SCREW, S/S	2
7	76207801A	SPACER, HEAD REAR RIGHT HAND ADJUSTABLE MARK III 21.62 0 AND 70 DEG	1
8	76207802		2
9	76207901A	SPACER, HEAD REAR LEFT HAND ADJUSTABLE MARK III 21.62 0 AND 70 DEG	1
10	76208001	PIVOT BLOCK, HEAD SPACER FRONT ADJUSTABLE MARK III 0 AND 70 DEGREES	2
11	76208100	PLATE, STIFFENER, REAR HEAD SPACER FOR ADJUSTABLE MARK III 0 AND 70 DEG	1
12	76208201	RIGHT HAND GUARD, BACKUP BAR CLOSURE, 70 DEG	1
13	76208203	SWITCH COVER, HORIZONTAL HEAD, MKIII	1
14	76210300	MOUNTING BRACKET HORIZONTAL HEAD MOUNT	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/21/2018	N.B
B	RENAME PARTS # WITH "A" TO MATCH INFOR	11/18/2024	CI



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APPROVED MFG: APPROVED ENG:

DRAWN BY: WF

TITLE:

MK3 HORIZONTAL HEAD MOUNT

TOLERANCES: UNLESS OTHERWISE STATED:
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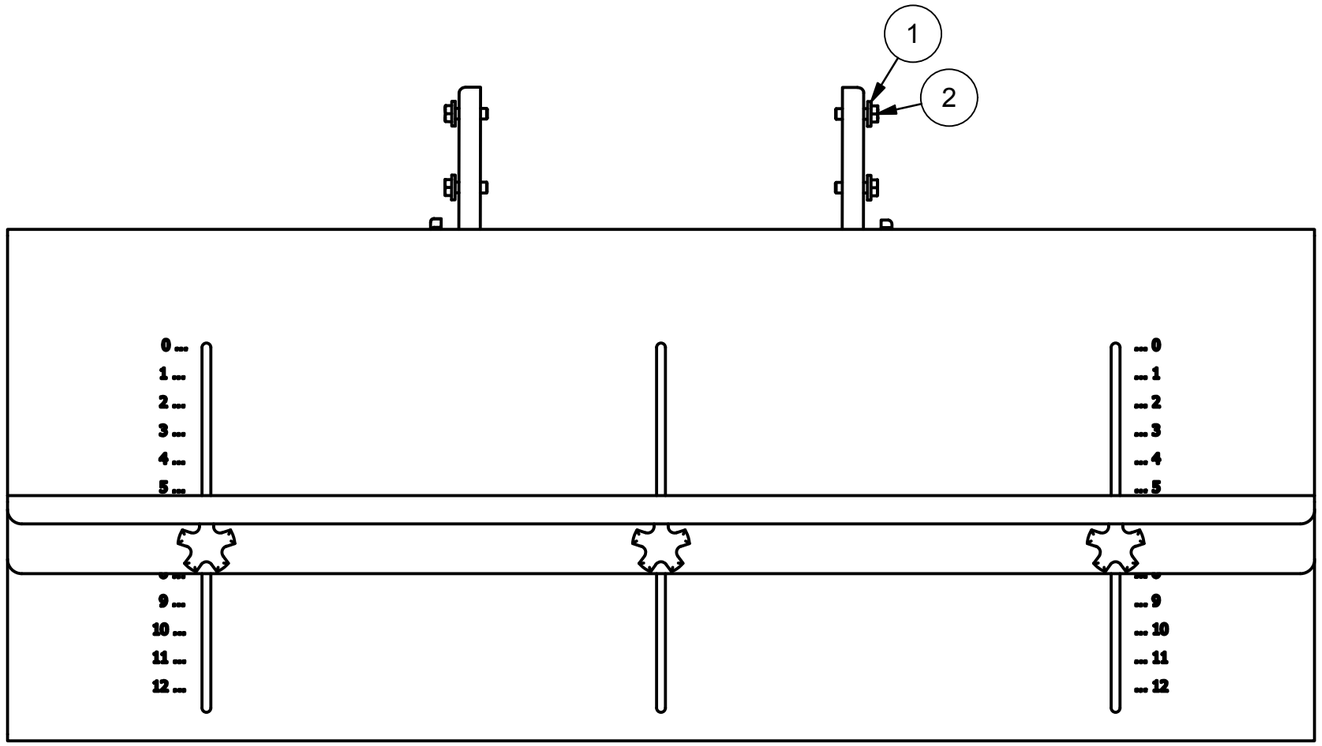
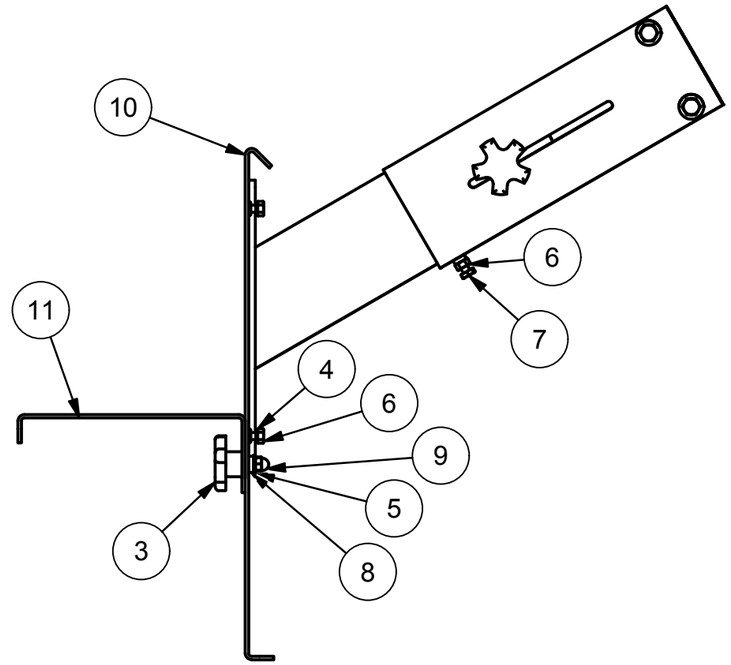
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

DWG NO.: MA015-0014 B

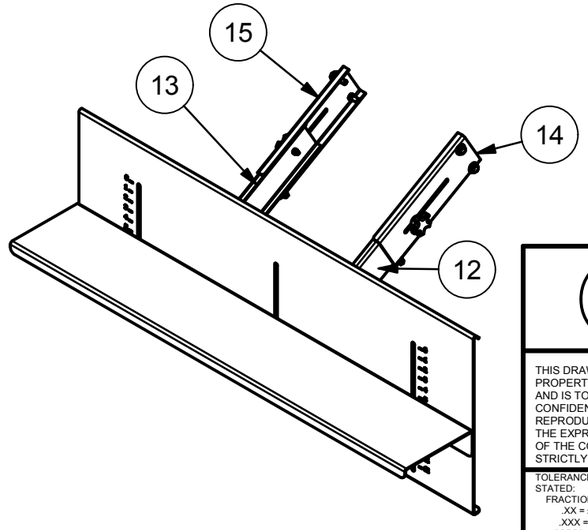
SCALE: N/A DATE: SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	8/3/2018	TOMJr
B	ADJUSTABILITY FEATURE MODIFIED	9/28/2022	TOMJr





PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	108745C1	3/8 FLAT WASHER, 0.875 O.D., 0.125 THCK, S/S	4
2	110834C1	3/8-16 X 1-1/4 LNG HEX HEAD CAP SCREW, S/S	4
3	75001201	BLACK PLASTIC KNOB WITH 1/4-20 FEMALE THREADED INSERT, BRASS	5
4	75102601	1/4 MED SPLIT LOCK WASHERS, S/S	4
5	75103301	1/4 FLAT WASHER, 0.625 O.D., 0.06 THCK, S/S	5
6	75103801	1/4-20 HEX NUT, S/S	6
7	75106401	1/4-20 X 3/4 LNG HEX HEAD CAP SCREW, S/S	2
8	75110401	1/4-20 T-slot nut, 5/16 table slot, S/S	3
9	75111801	1/4-20 ACORN NUT, S/S	3
10	76201501A	BACK REST, 46 WIDE PRODUCT SUPPORTY TRAY W/OFFSET STUDS	1
11	76203601A	SHELF, 8 DEEP 46 WIDE	1
12	76203701A	BRACKET, FRONT RH PRODUCT SUPPORT TRAY	1
13	76203801A	BRACK, FRONT LH PRODUCT SUPPORT TRAY	1
14	76206501A	BRACKET, REAR RH PRODUCT SUPPORT TRAY	1
15	76206601A	BRACKET, REAR LH PRODUCT SUPPORT TRAY	1



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DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: TomJr

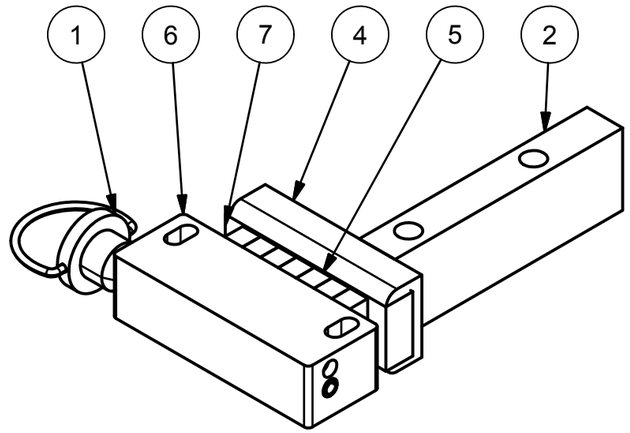
TITLE: PRODUCT SUPPORT TRAY KIT FOR MARK 3&4 PYLON

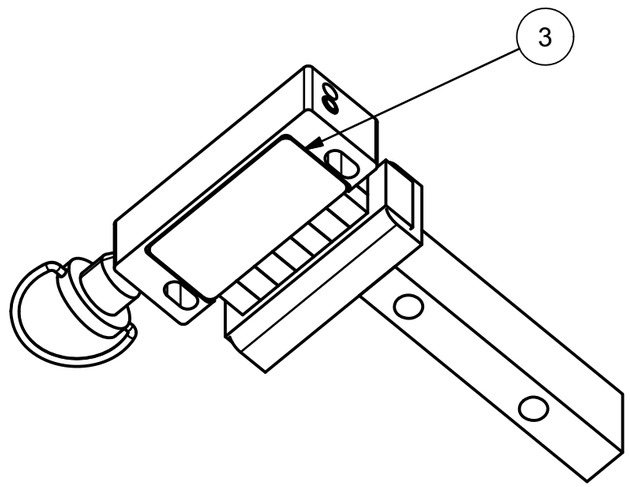
DWG NO.: 66200101 B

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	75002001	PIN, QUICK RELEASE, CHARACTER HOLDER FOR BAG CODER	1
2	76105801A	SUPPORT BLOCK, COMPACT PROBE TOWER	1
3	76111901A	BAG CODER FLOOR	1
4	76112001A	BAG CODER RUBBER HOLDER	1
5	76112901	1, 1/4 BAG CODER CHARACTER	14
6	76120101	BAG CODER; DUAL 1/4 CHARACTER HOLDER	1
7	79501102	RUBBER; BAG CODER 2-1/4" LONG	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI





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.XXXX = ± .0005
DRILLED HOLE: STANDARD S.A.E.

M-TEK INC.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

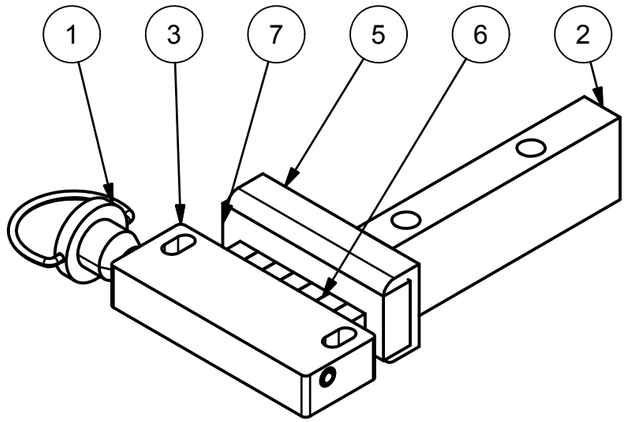
TITLE: BAG CODER DOUBLE LINE / PROBE

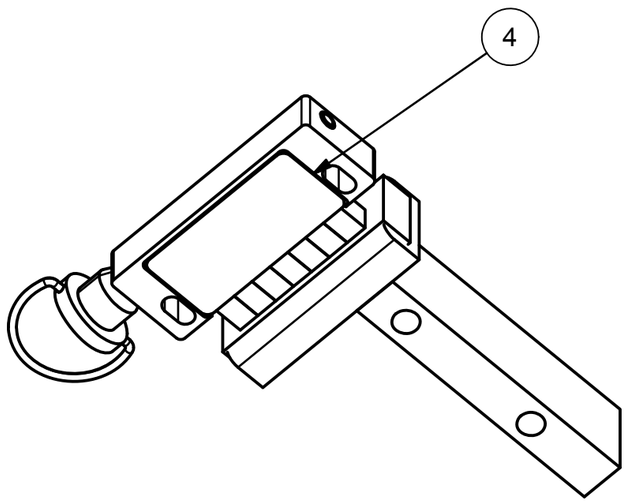
DWG NO.: MA261-0007 A

SCALE: N/A DATE: SHEET 1 OF 1

PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	75002001	PIN, QUICK RELEASE, CHARACTER HOLDER FOR BAG CODER	1
2	76105801A	SUPPORT BLOCK, COMPACT PROBE TOWER	1
3	76111801	BAG CODER 1/4 CHARACTER HOLDER	1
4	76111901A	BAG CODER FLOOR	1
5	76112001A	BAG CODER RUBBER HOLDER	1
6	76112901	1, 1/4 BAG CODER CHARACTER	7
7	79501102	RUBBER; BAG CODER 2-1/4" LONG	1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/02/2018	CI





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DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG: APPROVED ENG:

DRAWN BY: C.ILONTA

TITLE:

BAG CODER SINGLE LINE / PROBE

DWG NO.: MA261-0006 A

SCALE: N/A DATE: SHEET 1 OF 1